Hospital Progress

Vol. VIII NOVEMBER, 1927 No. 11

Physical Therapy as it Applies to Patients in the Hospital[1]

A. David Willmoth, M.D., Louisville, Ky.

MEDICINE in its many branches has kept its place in the advancement made, until today none can point to any class who have done more, or even as much, to advance the span of life, and assuage the hours of suffering during the time allotted to man. For many years each hospital individually, and since this and other organizations have been formed, collectively, have augmented their activities in a creative way. Improvements in all departments have progressed with rapidity sufficient to keep abreast of the times, and advancement in all medical lines.

Importance of Physical Therapy

Physical therapy today is so well established that it is, and of right should be, a component part of the treatment in every case in the hospital, provided its use is indicated. We have heard much recently, regarding the establishing of physical-therapy courses in schools. Why a separate department? We would not think of a separate chair to teach quinine, or any of the drugs. All physicians, and more especially those aiding the activities of hospitals, should study and know the indications for the use of natural energies in the management of diseases, and every hospital should have equipment to supply the demand for such treatment as may be prescribed. The department, if you are pleased to term it such, should be under the direct charge of a physician who is trained in physics and knows the proper indication and application of the energies prescribed. It may be indirectly under the guidance of a Sister or a nurse.

Today with the knowledge of the action of physical energies, patients have a right to expect of the hospital they enter, that such treatment can be had. In fact, the code of rules in the operating department presupposes that all efforts have been made to save organs before they are sacrificed, and it logically follows that natural energies are included, because their place in the physician's armamentarium has been won on merit. Having been an abdominal surgeon for nearly thirty years, well do I remember the change that has taken place in the past few decades regarding the needless removal of pelvic organs in the female. Nowhere is conservation more noticeable. Today many cases that I formally submitted to surgery are being conservatively treated by physical energies with satisfactory results.

Ultra-Violet Radiation

Time will not permit giving even a small number of diseases that are benefited by physical energies. But to be more specific for the purpose of study, the writer would like to call your attention to a few of the commoner conditions met with in the treatment of which all admit the value of physical energies. For the purpose of study we will divide them into the surgical, and non-surgical. Under the last head, what is more generally known than that rickets can be controlled by the use of ultra-violet radiation. To Hess, Steinboch, and Sir Henry Gauvain belongs the credit of bringing the curative value of the sun's rays to our attention. That book "Light and Health" should be read not only by every physician and nurse, but by the laity as well.

Who in hospital work has not heard of the wonderful clinic of Rollier? Think of fourteen thousand cases of tuberculosis being under the care of this genius, and only the God-given energy from the lamp of the heavens being used. "But," you say, "he treats the surgical-tubercular conditions." This we admit, and it is for this reason they are mentioned at this time. Surgical tuberculosis simply means that the disease processes are so located that tradition assigns them as surgical, being amenable to operative procedures. With the newer concept of this condition we are inclined to say that surgical interference in many cases means disaster. This dictum does not apply in renal types of the disease. Tubercular kidneys should as a rule be removed.

Another tubercular condition that does well under the use of the ultra-violet energy is peritonitis. For years we have been wondering what did the good that seemingly took place after the abdomen was opened. It was most likely due to the rest in bed, good food, and in the main, to the beneficial effects of the sunlight the patient got after the operation during the convalescent period.

[1]Read at the Hospital Clinical Congress, Milwaukee, Wis., June 23, 1927. Dr. Willmoth is a member of the staff of St. Anthony's Hospital, Louisville, Ky.

At the present time there has been enough evidence produced to convince the most skeptical that in all these cases nothing does so much good as the ultra-violet. These cases do best who get an early tanning of the skin, and are thus protected from the skin erythema that many experience. Some have gone so far as to say that the treatment by ultra-violet is almost a specific, whether this is true or not, it is today the most outstanding energy we have for fighting this malady.

The so-called scrofulous glands (tubercular) are also benefited by the air-cooled ultra-violet energy. Whether this is a local action, or due to a general body uplift is not clear, but it is most likely the latter. The anemic, poorly nourished, white and frail child is rejuvenated, and is made healthy, not only in looks but ruddy in appearance from the good red blood that traverses its vessels. Bone ends whose cartilage showed the moth-eaten appearance due to the removal of calcium, now show the opposite, and normal growth begins to assert itself.

In those who have become depleted from the ravages of an infection, whose general appearance shows anemia, pale lips, lack of color, weakness and in whom improvement seems to be slow to assert itself, try biological ultra-violet and you will be surprised at the rapid change to normal color, and the fight for health is won.

Again in the case of those upon whom for any reason an operation was done and in whom there now exists a sinus that just won't heal, inject this with a ten-per-cent aqueous solution of any of the aniline dyes, my own preference being gentian violet or carbol-fuchsin; insert the tip of the pencil applicator of the water-cooled lamp for three to five minutes and watch the changes that occur in the next few days, and unless this is a fecal fistula, you will usually be rewarded by a closure of the tract that had otherwise refused to heal.

In those suffering with facial erysipelas when they first present that rose-colored skin so characteristic, with the burning sensation that is pathognomonic of the infection, use your bactericidal ultra-violet with open window, at six-inch distance for two minutes and repeat in about twelve hours, and you have controlled the trouble in nearly every case. The effect is so rapid that even the patient is skeptical of its lasting effect. No medicinal lotion that I am familiar with compares with this bactericidal energy. Not only are the symptoms controlled but the spread of the disease likewise. Should you feel inclined to enhance the action of the lamp, you may do so by applying to the surface to be treated peroxide, full strength or ten-per-cent aqueous solution recorcin.

In the acute tonsillitis that is of the follicular type, your results with the bactericidal ultra-violet energy will be so satisfactory that two or three treatments will at least relieve the acute symptoms to the point of causing the fever and aching to disappear, and three or four more applications will relieve the case. Of course no one would suggest this treatment to the case of so-called quinsy, where an abscess is already formed or is in process of formation; here surgery is clearly indicated.

Under this heading of light comes the use of infra-red, so much heard of today. This can be dismissed by saying that it is heat only, and will do no more than any other form of heat. It does not, and cannot penetrate beyond the most superficial layer of tissues. The expensive lamps are of no greater value from a therapeutic standpoint than one bought at a chain drug store or electric shop. They have a small place in treatment where heat is desired, but too much must not be expected of their use.

High-Frequency Currents

Leaving the question of ultra-violet and considering an energy of another wave length, the high-frequency currents, would in the opinion of the writer benefit more patients than any, save those above referred to.

A sufficient number of cases of true lobar pneumonia have been treated by diathermy to make its use one to be considered in the case of those so afflicted. And if used early and correctly, it offers more than can be expected of medical agents. Many cases are reported where the disease was controlled in twenty-four hours by two or three treatments. It is not understood by the writer that those having the most experience with this energy claim any good from it to the pneumonitis of streptococcus origin.

The use of diathermy is again seen at its best advantage in joint stiffness, due either to sprains or other injuries where the joint has been in fixation for some time. Diathermatize the joint until the deeper structures are warm, and immediately after the removal of the electrodes practice your therapeutic exercise. You will be amazed at the difference between this and the old way of using massage with active and passive motion. It must be remembered, that lower milliamperage for longer time, is far superior to higher readings for shorter time. In other words, do not try to hurry your treatments if best results are to be expected.

In my own chosen field of medicine, viz., gynecology, I know of nothing that is of such great value in those painful menstrual disorders as diathermy. Not only is it of pain-relieving value, but curative in many cases if used between the epochs. You will not have the need for morphine for these women that you now have, and there are splendid possibilities for cure.

It has been proved that organs within the body can be heated by the use of the d'arsonval current, and for every degree of heat obtained above the normal you can reasonably expect a ten-per-cent increase in the action of the organ.

For a number of years we have been using diathermy upon all patients who come to us with chronic liver conditions. This class comprise the so-called bilious patient, who is constipated, has sallow skin, always has to take something to move the bowels, has

coated tongue, poor digestion, etc. Nonsurgical gall-bladder drainage, together with the application of diathermy to the liver has relieved many of these, and enabled them not only to avoid the operating table, but to eat a liberal selection of food, and digest their meals, and live in comfort. Such cases should have two or three treatments each week, usually two immediately following their drainage. However, these treatments can be given at other times but for best results they should follow the drainage.

Again in those cases suffering with sore and stiff muscles (so-called rheumatism) either as the result of violent exercise or injury, or of unknown causes, nothing gives quicker relief than indirect diathermy. Place the technician between the patient and the machine, her fingers acting as the rheostat and notice how short a time is necessary to soften and make pliable the muscle that was so tense as to limit the slightest movement. If you have ever suffered from spasmodic torticollis due to a slight cause of which you could not account, and had the muscles treated by the above method, you can appreciate the results obtained, by turning your head after the first few minutes. If the operator is a female as is usually the case, she should not be allowed to give these treatments during her menstrual period, as they will increase the flow beyond the point of tolerance, unless she be very strong and robust.

Time will not permit even the mere mention of the many conditions, including a number of gynecological ailments that are either relieved or materially benefited by the use of the high-frequency currents, in the various methods best suited for the individual case. Remember heat is not the only factor we are dealing with in diathermy, but the chemical aspects of the passage of the current through the tissues being heated, must be taken into account. So also must the effect on the ductless glands, which are influenced by the action of the current either on the gland direct, or through the sympathetic and para-sympathetic nervous system.

CARBUNCLE AFTER ELECTROCOAGULATION
ON MAN 65 YRS. OLD.

Passing to the surgical uses of diathermy, or the destructive phase of the subject, we find a most fertile field for its use. Not only are the effects on the patient all that can be hoped for, with our present knowledge of the use of heat, etc., but the surgeon has the satisfaction of having at his command an energy that is dependable, easily manipulated, and so flexible that it can be used to destroy the smallest growth on the edge of the eyelid, or even on the eye, and yet so powerful that any amount of destruction may be had, depending on the volume of current used and the length of time it is employed.

In thirty years of surgical work, nothing has come to my hands so entirely satisfactory as the use of surgical diathermy. It enables you to remove medium-size pathological lesions in your office, under local, or combined local and hyoscine morphine and cactine effect, or gas anaesthesia. It also enables you to attack the most extensive carbuncle or cancer, in a bloodless and scientific manner. When once its application is understood (and it should not be used until it is understood) you have simplified your work in dealing with many of the most trying and dangerous cases that present themselves for relief.

Electrocoagulation

In general surgery, what is more dangerous than a large carbuncle in the old man, who perhaps is suffering with a diabetic condition, plus the extreme sepsis from the carbuncle. Well do you know what the outcome is going to be in most of them when first examined. It requires only a slight shock to close the scene. Unless the case is moribund, with electrocoagulation the large foul and septic mass can be safely removed and the case put well on the road to recovery in the next twenty-four hours. Morphine, hyoscine and cactine, given in the full-strength tablet two hours before the time of the operation, plus, if needed, the half-strength shortly before the case comes to the operating table, will enable you to work without any pain to the already weakened patient. You have no hemorrhage, hence no shock, you have no after pain. You seal off all avenues of absorption at once thereby controlling the sepsis. You remove all necrotic tissues and produce at once a healthy field, ready to begin the healing process.

The patient that a few minutes before was writhing in pain and begging for opiates in large doses will awake from his sleep in two or three hours and, if operated upon in the early morning, will be ready for his dinner at the noon hour, and will eat with satisfaction, as he is now free from pain, his temperature has receded, or is receding; he will enjoy the meal, and recovery begins at once.

Again in cancer of the uterus, you have in electrocoagulation the method *par-excellence*. Here again you have no hemorrhage, no shock, no pain after the work is done. You have sealed off all lymphatic channels, thereby preventing so far as is humanly possible the spread of the disease. Your patient will have a short

stay in the hospital, and best of all, you have no operative mortality.

Nearly all surgeons agree that superheating the surrounding tissues is the best method in dealing with the far-advanced cases, after surgical operation has been tried, and the cancer recurs and hemorrhage and discharge again asserts itself. If this is true then isn't it logically true that it would be still better for the early cases? This has been my personal experience and for several years I have not done a cutting operation on any cancer case presented for relief, save those of the hollow viscera. The results obtained are so outstanding over cutting surgery, that you will never return to the knife when once this method is understood and tried.

It has another virtue that is of no small importance in the case of patients in the early stage of the disease. You can assure the woman that no cutting operation is to be done. This is a strong pursuasive argument for her to go at once to the hospital. Many patients hesitate when seen early, to have something done, fearing the extensive cutting work with which they are already perhaps more or less familiar. The electrocoagulation does not in any way preclude the use of X-ray or radium if their use is desired, following your work.

In those cases seen late, where bleeding is profuse and much tissue is involved, nothing is so helpful in relieving the constant drain, and controlling odor, and prolonging and making life bearable as electrocoagulation.

In the cases coming early for treatment, those that we are sure from the small lesion are malignant, and those where a specimen from the cervix shows malignancy, should be cured, if cure is possible. While I am a user of radium in many of these cases, it has not given the results hoped for, and I am resorting more to the electrocoagulation, at least first, then radium and X-ray as follow-up treatment.

In those coming for relief of abscess of bartholin glands, open the abscess if it is not already open, and either coagulate at once or wait twenty-four hours and destroy the sac with your needle; you will not have the hemorrhage you have been accustomed to having, when dissection is employed. Again, in those frequent and minor cases, of erosion of the cervix, in one treatment by dessication with the monopolar current they can be cured. This can be done under a local anaesthetic.

Sinusoidal and Galvanic Currents

No paper dealing with the subject assigned, would be complete unless something were said relative to the use of the long-wave-length currents, viz., the sinusoidal, and galvanic. So many women, and many men are suffering today from a delayed intestinal stream, with all its symptoms, such as languor, foul breath, coated tongue, headaches, etc. Medicine has never met the full requirements for relieving these cases. Either the drug loses its effect, or the patient loses his enthusiasm to take it, and it is discontinued, and the patient goes along with his same symptoms.

It is far more logical to stimulate the gut wall with a stimulant that is going to improve the condition underlying the trouble. We have for years known that we could increase the function of nerves in the extremities by the use of the sinusoidal current. Try the same procedure here. The nerve enervation of the gut wall can be made to function again by proper stimulation. This means that we must imitate the normal; generally we produce contraction too rapid, thereby doing harm by tiring the nerve. Alvarez has shown that in the lower bowel six to ten contractions per minute is the normal, usually not more than six, and this we have many times verified. The best effect will be had by applying the pads of equal size, and not more than four inches in diameter and preferably three inches, on either side of the spine opposite the eleventh dorsal vertebra, and at equal distance from the vertebra. The effect is far better than drug methods. Once employed, this will not be discontinued in your work.

Again, in those cases of tic douloureux, where the patient is almost on the verge of suicide with intense paroxysms of pain, you will find in the rapid continuous sinusoidal current not only a relief from the intense spasms, but, if used a few days, most of these cases, if early, will respond to treatment. I could recite some very interesting results that have come under our observation in patients that have been referred for treatment. We relieve those cases by tiring down the nerve so that afferent impulses are not transmitted. Personally I would hesitate a long time, before having my gasserian ganglion removed for this condition. I would feel reasonably sure I could get well without such extensive, and dangerous surgery.

We now come to the use of an energy that all are more familiar with, viz., the galvanic current. This current being the chemical current due to its polarity, and being such, is the one used in commercial work for silver plating, etc. This being true its action on metals is fairly well understood. Taking advantage of its chemical action, we have one of the most efficient agents in the treatment of gynecological cases. In no work, do I recall a more specific effect than the use of the mercury amalgamated copper electrode in the treatment of cervical infections. We not only get the bactericidal action of the copper which is a splendid one, but we enhance this by the combination of the mercury, the electrode being used on the positive pole, while the negative is applied as the dispersing one. Three or four treatments for ten minutes will do more to relieve the case of the annoying discharge than will weeks' medication with the various antiseptics generally used.

Since we are in the habit at this time, in thinking of the silver salts, in some form as our solution of choice in these cases, why not use the silver electrode and ionize the silver directly into the tissues. This can be done readily as silver ionizes rapidly, even more

MULLANPHY HOSPITAL, ST. LOUIS, MO., AFTER THE RECENT TORNADO. THE 63 PATIENTS IN THE BUILDING AT THE TIME WERE SAVED.

so than copper or mercury. You will be surprised at the results obtained and will learn to depend on it in all such cases. You will not be disappointed in the results obtained. It has done more to promote conservative gynecology than any one thing.

Again, if we wish to contract the uterus to control bleeding in the soft, boggy organ, we have in the positive pole a remedy far better than drugs, its action being like the polarity used, positive in its effects.

Leaving the field of gynecology and going into one of common experience, in the asthmatic who is suffering with such paroxysms as to make life almost unbearable, galvanize the pneumogastric by placing the positive pole over the area just beneath the tip of the mastoid process and the negative close up in the fork of the ensiform cartilage. Use ten to fifteen milliamperes for ten minutes and note the results. You will relieve the attack in three minutes. Morphine or adrenalin is not needed. Patients can be made comfortable, and the attack controlled in from five to ten treatments.

Time will not permit the further study of these energies. If we will but study and understand their action just as we would expect to do any drug we intend to prescribe, the effect will not be disappointing. Well-known physical laws govern their action, and these must be followed.

There is no such thing as luck or chance,
There is no effect without the cause;
The very seeds the farmer plants,
Produce the plants through natural laws.

Civil Service Examinations. Applications for graduate nurse, graduate nurse (visiting duty), assistant medical officer, associate medical officer, medical officer, senior medical officer, and dietitian will be rated as received at Washington, D. C., not later than Dec. 30. Applications for physiotherapy aid must be on file by Nov. 12.

The United States Veterans' Bureau Hospital at Knoxville, Iowa, is in need of a specialist in pathology. Entrance salary for this position is $3,800 a year. Applications for examination for this position are now being received by the United States Civil Service Commission at Washington, D. C.

Civil-Service Examinations. Applications will be rated as received until December 30, 1927, at the United States Civil Service Commission, Washington, D. C., for the position of social worker (psychiatric) and junior social worker. The salary for the social worker (psychiatric) is $1,860 a year, and the salary for the junior social worker is $1,680 a year.

Planning, Placing, and Equipping a Hospital Physical-Therapy Department[1]

John S. Coulter, M.D.

PHYSICAL therapy is the scientific adaptation of physical measures for therapeutic purposes. There are two sides to this form of therapy, the scientific and the human; the scientific side includes the intelligent use of heat, light, electricity, massage, and exercise in the treatment of the sick and injured, and the human side demonstrates the continued interest of the physician in his patient through the convalescence to a final recovery and restoration to complete usefulness. Scientific investigation of physical forces has caused them to be recognized as the greatest curative agents, and today the action of few drugs on the human body are as definitely known as the action of ultra-violet radiation. Therefore, as the modern hospital is the place where the sick may benefit by the latest scientific discoveries, it is essential that it should be equipped to make these methods of treatment practical.

Opinions of Surgeons Differ

In planning a physical-therapy department for a hospital, the first consideration must be the attitude of the staff toward the subject and toward the establishment of a department in the hospital. The medical profession is by no means in accord on the value of this means of treatment. In the report of the Research Group of the Committee on Traumatic Surgery of the American College of Surgeons they say that in a large majority of cases, physical therapy as now rendered is of little value. . . . If, on the other hand, this type of treatment can be applied only to the carefully selected cases and then given only for a reasonable length of time early in the case, it is believed that such application will give benefit. In a still later report of the same body Dr. Albee in considering hospital features for industrial patients, says that a well-developed physical-therapy department and a curative occupational workshop are essentials. This difference of opinion in the medical profession is due not to the lack of value in this form of therapy but to the commercialization of this type of treatment and to the activity of the makers of various types of apparatus in making exaggerated claims for the machines. As scientific investigation goes on and as medical schools establish departments for research along these lines, such as the Northwestern University Medical School in Chicago is doing, by starting a department of biophysics with Professor Bovie as its head, more of the medical profession will become acquainted with the scientific value of these means of treatment. But at the present time in planning this department for your hospital you must consider the opinions of your staff, and what classes of cases they believe need physical therapy.

[1]Read at the Hospital Clinical Congress of North America, Milwaukee, Wis., June 21, 1927. Dr. Coulter is Assistant Professor of Physical Therapy, Northwestern University Medical School, Chicago, Ill.

Planning a Physical-Therapy Department

The staff must also decide what mode of physical means they want to use in their cases. Several prominent men in this work in the east have stated in papers on this subject that if they were limited to two things in a physical-therapy department they would have heat and static electricity. Many others would have no use for the static current.

Economical considerations in regard to the staff and its relations to the patient are important. In one good-size town in Illinois I heard the staff express the opinion that, as their patients were mostly farmers of moderate means and that while they believed in the value of physical therapy in many cases, they were afraid that if the patients had anything further added to their hospital expenses they could never pay the doctors' bills as it now took them months to get on their financial feet after a hospital case in their family. Therefore, this staff had consistently opposed the establishment of a department in their local hospital. Now while it has been proved that properly administered physical therapy will shorten the hospital stay and reduce the ultimate cost of the patients' bills, the staff must be convinced of this before any large amount of money and space is devoted to this department. This can be done best by starting with a small department, expert personnel, and a careful selection of cases.

The attitude of the staff to the hospital treating outpatients is important in its relation to this department. Frequently physical therapy must continue for weeks after the primary medical and surgical treatment has ceased. Many physicians believe that it is better for the patients to discharge them from the hospital and the hospitalizing influences. Some physicians have purchased expensive physical-therapy apparatus and have hired technicians to treat patients in their office. These men are opposed to the hospitals treating patients after they leave the hospitals, and if the hospital department does treat outpatients these doctors will not start their cases in the hospital as they do not want them to continue in the hospital after they are discharged. These men are the ones who would use physical therapy the most, so this is an important point.

The second general point to be considered in planning this department is the class of cases that are to be treated in the hospital. This analysis must be deeper than a general classification of the number of medical and surgical cases, or the hospital will get into the same difficulty that one I know of did recently. This hospital was starting a physical-therapy department and based its analysis on the number of beds it had in relation to another hospital where there was a large department. These two hospitals were apparently nearly

alike, so this hospital started a department in an almost ideal place with the proper amount of space, with the necessary equipment, and personnel. But in spite of this ideal layout this department has treated few patients and has been a considerable loss to the hospital, because it was a hospital in a residential district, where there were few accidents, and in spite of a large and active surgical service, most of these cases were acute surgical cases not requiring physical therapy, and there were no orthopedic specialists on the staff and no children's wards. So this department should have been started with a half-time technician, and half the space and equipment.

Typical Physical-Therapy Cases

In this connection it might be well to review briefly some of these cases seen in the average physical-therapy department of today. In children, cases of rickets are most often treated. In our clinic we expose children with rickets to the air-cooled mercury-quartz light, general body exposures, starting at 40-inch distance for two minutes, increasing the time every day one minute if there is no reaction of the skin, or every other day, up to twenty minutes for each exposure, giving two exposures, one anteriorly and one posteriorly. They soon lose their muscular weakness, irritability, and sweats and show an increase of blood phosphorus, and the X-ray shows an increase of calcium in the epiphyses. Spasmophilia is another disorder in the calcium metabolism. The use of the ultra-violet rays is again the method of choice in treatment. Infantile tetany is also a disorder of calcium metabolism and associated with disturbance of the parathyroid glands. Children with this condition show a quicker improvement under ultra-violet radiation than do the cases of rickets.

The mercury-quartz light has a definite and useful field in dermatology. In varicose ulcers of the leg nothing is more striking than its action on a foul ulcer. Using the air-cooled light at 40-inches distance starting at three minutes and increasing the time and decreasing the distance will clean up the ulcer and start epithelial proliferation. Birthmarks of the port-wine type are treated by the water-cooled light pressed firmly against the skin to get a blistering burn. Our results have been excellent in alopecia areata using the water-cooled light to get a fair erythema. The air- or water-cooled light can be used to clear up cases of psoriasis, but will not prevent their recurrence. Lupus vulgaris was one of the first diseases to be treated by artificial light. Finsen used a carbon-arc light for this, and his successor, Dr. Reyn, claims that he gets better results from the start and has more permanent cures with the concentrated carbon-arc rays than with the mercury-quartz rays, but we have used the water-cooled mercury-quartz light with excellent results. Acne vulgaris is often benefited by these rays, possibly not as often as with X-rays, but these ultra-violet rays are without danger of lasting burns. Pityriasis rosea and eczema are often benefited by these rays. They have some value in the treatment of chronic ulcers and telangiectasia caused by X-rays or radium, but have no prophylactic value against acute or chronic radiodermatitis.

In our clinic in ear and nose conditions the ultra-violet light has been used with some good results in chronic otitis media and some sinus conditions, but the number of cases has been too small to draw definite conclusions.

Useful in Tuberculosis Cases

Artificial radiation has no greater field than in the various forms of tuberculosis. Edgar Mayer in his recent book, "Clinical Application of Sunlight and Artificial Radiation" covers this field in a most complete manner. In our experience the most favorable results with artificial-light treatment is in lymph-node tuberculosis. We use the water-cooled light over the glands in contact for one minute to produce a severe local reaction increasing to three minutes, giving it every other day if the reaction has not been too severe, and using a quartz-rod applicator in sinuses, if such are present. Along with this we use general body exposures with the air-cooled mercury-quartz light every other day, starting at 40-inch distance for two minutes anteriorly and posteriorly. At times it is necessary to add X-ray treatment. Several series of case reports show as high as 90 per cent cured.

Intestinal tuberculosis showed with 209 cases analyzed by Brown and Sampson that of 29 who received no ultra-violet treatment 83 per cent died, while of the 180 treated cases 65 per cent are living and only 35 per cent died. Of course, the beneficial results are hard to prove as many cases of intestinal tuberculosis spontaneously lose their symptoms and recover. In our cases we use the air-cooled mercury-quartz light as previously described for general body exposures. Better results are secured if outdoor conditions are simulated by proper ventilation of the room, even if heat lights have to be used over the patient. Tuberculous peritonitis is treated the same way and the results are as good as in the intestinal form.

Bone and joint tuberculosis should be treated with conservative methods except in those who cannot devote the time for it and one of the greatest aids to correct orthopedic treatment is ultra-violet radiation, both local and general.

Laryngeal tuberculosis is best treated by general body radiation with the air-cooled light plus local treatments with the water-cooled light with a quartz-rod reflector. Genitourinary tuberculosis is a resistant form and our results have been as poor as the other reported results.

In pulmonary tuberculosis sunlight and artificial radiation should be used only after rest, hygiene, and diet have failed to cause satisfactory progress. The carbon-arc light emits considerable heat rays and should be used only in stationary cases. In pulmonary cases carefully graduated doses should be applied, starting

with the legs and not exposing the trunk for the first few treatments.

Use in Traumatic Surgery

The indications for physical therapy in traumatic surgery are many and in these cases, emphasis must be placed on starting early, on a careful selection of cases, on avoiding the danger of overtreating, and on the close supervision of the attending surgeon. In muscle and ligamentous strains the pathology should be remembered. There is petechial hemorrhage, round-cell infiltration, and serofibrinous exudate. To disperse this exudate and prevent its increase is the object of physical therapy. Much harm can be done by misdirected physical means and it is only too often that these cases are sent to a masseur with the directions for heat and massage. Massage except the very lightest in an acute injury only increases the pathology. In these conditions radiant heat followed by direct diathermy is the treatment that will relieve the pain and shorten the disability.

Sprains if placed at rest and lotions used owe their subsequent stiffness to this treatment, not to the injury. To restore a sprained joint to normal motion we use radiant heat followed by direct diathermy for thirty minutes, gentle massage, and early motion. This motion should be passive and limited by the onset of pain. If this rule is observed no damage is done to any torn ligaments.

Dislocations after reduction should have massage and exercises started at once under the care of the surgeon. In fact, all joint motions in a recently reduced dislocation should be done by the surgeon himself after heat has been applied for some minutes to the joint. This motion should be gradual and not at too great an angle before a week or ten days have passed. The function of a joint is motion and a joint not moved will become stiff. Also the muscles moving a joint are usually supplied by the same nerves as the joint itself and there is a reflex atrophy of these muscles. This can be prevented only by heat, diathermy, massage, and sinusoidal muscle stimulation and proper motion.

In ankylosis of joints most of the cases would not require such long treatment if the cases were referred for physical therapy earlier. In all treatment of stiff joints, cases of bony ankylosis, and cases where there is some pathological process should be excluded, and here physical therapy is useful only in the stiffness caused by adhesions inside or outside the joint, by inflammatory changes, or by retraction of scar tissue. The preparation of a stiff joint for treatment is producing an artificial local inflammation to aid in softening the fibrous and contracted tissues. The agents used are radiant heat, the whirlpool bath, or the galvanic current. The joint is next massaged, manipulated, and exercised to disperse the effusion which the preparatory step has created, to mobilize the joint and stretch the adhesions and scar tissue. The muscles are next stimulated by the sinusoidal current, which current gives a gradual, painless, and wavelike muscle contraction of the usual physiological type. To regain power in the weakened muscles voluntary work causing the unconscious use of the limb is the best treatment.

In fractures the surrounding structures as well as the bone are injured. Rigid fixation by splints or plaster without physical therapy withholds from these structures the treatment by which repair can be accomplished, and thus we have added to the original injury, adhesions and the atrophy of disuse. The method of traction and suspension, which in itself is a physical measure makes it possible to institute heat and massage early in the case. Early physical therapy in fractures prevents muscle atrophy and joint stiffness.

EXHIBIT OF PHYSICAL-THERAPY APPARATUS AT THE HOSPITAL CLINICAL CONGRESS, MILWAUKEE, WIS., JUNE, 1927. ARRANGED TO SUGGEST A SETUP OF APPARATUS IN THE HOSPITAL.

Peripheral nerve injuries are sent to this department both before and after operation. In the after treatment of nerve injuries whether operated upon or not, the essentials are physiological rest in splints to completely relax the paralyzed muscles and to prevent the active muscles from contracting, and restoration of function by physical means. These cases report for daily treatment with radiant heat, massage, slow sinusoidal muscle stimulation, and muscle training. In these cases it is necessary not to give too much electrical muscle stimulation and never to give this without muscle reeducational movements.

Muscle and tendon injuries should be carefuly treated and motion started after suture in the direction that relaxes the sutured tendon. Painful amputation stumps are best treated in the whirlpool bath.

Treating Orthopedic Cases

Flat feet are often due to trauma, and the application of supports alone is never satisfactory. Heat, massage, sinusoidal electrical muscle stimulation, manipulations, and exercises should be used to strengthen the muscles and ligaments thus effecting a real cure. Bursitis and tenosynovitis are generally improved with radiant heat and direct diathermy, along with the proper rest by splints and the removal of any foci of infection.

The physical-therapy department should work in close harmony with the orthopedic department, and if the department has properly trained personnel and good equipment they will receive many orthopedic cases such as infantile paralysis, obstetrical paralysis, posture cases, foot deformities and weaknesses, and spinal curvatures.

Myalgia, myositis, and neuritis are often quickly relieved by radiant heat and diathermy, along with the proper medical treatment. Atonic forms of constipation can slowly be improved by adding physical therapy to the medical treatment, and with the care of the diet, plenty of outdoor exercise, application of the sinusoidal current, massage, and exercises these cases surely improve.

The surgical staff will use the high-frequency machine in their operations for electrocoagulation for the destruction of new growths. These types of cases are just a few of the many that show the wide range of physical therapy, and serve to illustrate the cases to be considered in planning this department.

Personnel of the Department

The next and most important point to be considered in planning this department is the subject of personnel. In these days of high-powered salesmen for all sorts of machines for physical therapy, it would seem that the first and nearly the only requirement for this department would be equipment. Physical therapy is not machine therapy and hospitals who go into this field with the idea of only machine therapy will come out of it with a bitter feeling toward the whole subject and their machines will soon be covered with dust as many of the hospitals found who bought static machines and Zander exercise apparatus years ago. The most important part in planning this department is to get properly trained personnel, and if this is impossible, do not start the department.

It is believed that this department should have a physician to supervise it, and it is realized that few hospitals can pay any salary for this and that it is hard to get any physician to do good work for nothing. One criticism that is being aimed at physical-therapy departments is that patients are kept there too long and that some are being treated who do not need treatment. This is especially true of some industrial cases where the patient is drawing compensation and is perfectly willing to come indefinitely for treatment. It is not believed that decisions on the length of treatment and kind of treatment can properly be left to the technician. The physician in charge of this department should see the new cases to prescribe the treatment which has been suggested by the referring doctor, see each case every

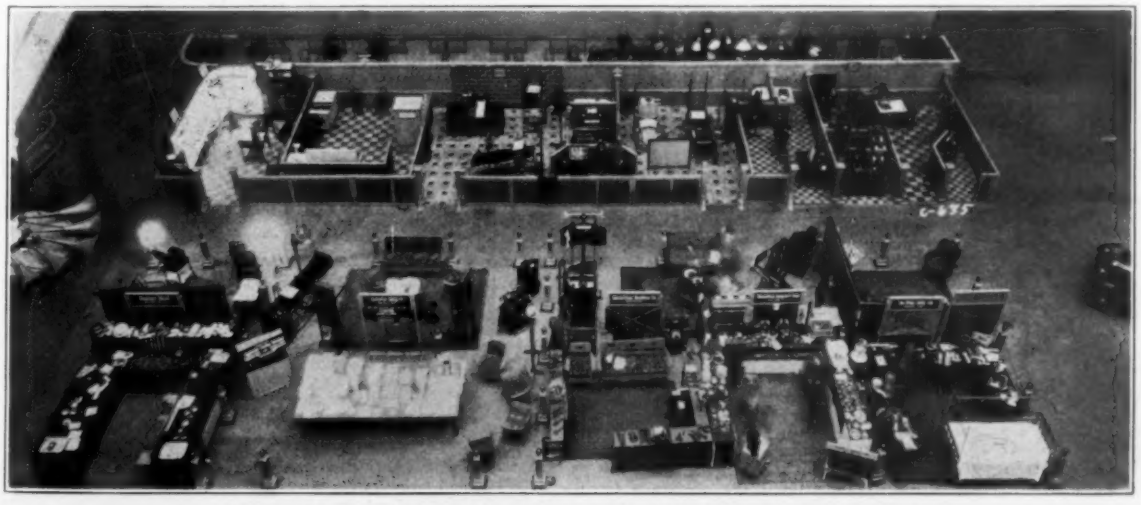


EXHIBIT OF X-RAY APPARATUS AT THE HOSPITAL CLINICAL CONGRESS, MILWAUKEE, WIS., JUNE, 1927.

week to decide if the maximum improvement has been reached or if the treatment needs changing, and to see cases at other times on the technician's request. In few hospitals would this require more than an hour daily. For this work the physician should receive a small percentage of the department's receipts or he could be given permission to treat his own cases here for only the cost of the technician's time used for his cases.

The treatments should be administered by a properly trained technician. It seems hardly possible that the medical profession and hospital authorities are less critical of the requirements for this work than the people who actually do the work under their direction. Yet this is so. The American Physiotherapy Association is an organization of physiotherapeutists. They insist on calling themselves physiotherapeutists, because they rightly feel that the term physiotherapy technician has been brought into disrepute and now means a person with little training who is capable only of running a machine. Their requirements for full membership in their association are surely not too high for the hospitals to set as a minimum standard for the technician in charge of administering physical therapy in their departments. They require a high-school education, completion of a course in a recognized physical-education school or in a recognized school for nurses, the completion of a course in a recognized school for physical therapy, and one year's experience in this work within two years of their graduation from the physical-therapy school.

This much emphasis must be placed on properly trained personnel because a majority of cases seen in this department need, in addition to anything given by machines, proper massage, therapeutic and corrective exercises, and muscle reeducation and no machines can be invented to do this work.

Location of the Department

Placing the physical-therapy department is dependent upon many factors and those just outlined enter into it as the first requirements. The exact location should be determined by the other departments which are to send the most cases, to make it convenient for the ambulatory cases in the hospital to get to this department and to make it possible to get apparatus from the physical-therapy department to the patients' bedsides. In old hospitals the location must be determined by the space not otherwise used, but this department should not be placed in the dark basement for several reasons: the patients are usually here for an hour's treatment and need a room with good ventilation, and this department uses in treatment ultra-violet radiation and should be placed where the natural sunshine is available. In hospitals where outpatients are to be treated the department should be on the ground floor or as near to it as possible so these patients do not have to go through the hospital corridors.

Planning and Furnishing Rooms

In considering space for this department it is wise to remember that much space may be saved and the technician's time reduced in giving treatments by dividing a large space into smaller spaces by means of wires stretched seven feet above the floor from which curtains are hung. This system of forming cubicles is the least expensive and has the greatest flexibility. It has the disadvantage of less privacy than separate rooms, but if there are separate hours for men and women this arrangement will have few disadvantages, as many hospital cases are treated in their private rooms.

The floors should be covered with linoleum, except the hydrotherapy and whirlpool bathrooms which should have tile floors. Both alternating and direct current should be wired into all treatment rooms with dissimilar wall receptacles so that it will be impossible to mistake them and plug in wrong. This prevents damage to apparatus, and the two kinds of currents will save considerable cost on apparatus, as different machines require different currents, and the cost is considerable for rotary converters or motor-generators furnished with each machine.

Regarding Equipment

From the many factors influencing the physical-therapy department it will be seen that a list of equipment would mean little in a paper of this character.

AN INVITATION TO JOIN.

THE AMERICAN NATIONAL RED CROSS will hold its ELEVENTH annual Roll Call from Armistice Day through Thanksgiving—November 11-24—when all are cordially invited to become members of this great organization. Membership dues paid at that time maintain the work of the Red Cross—local, national, and international—throughout the coming year.

Several generalizations might be made about equipment: First, much of the equipment can be homemade by a carpenter or plumber, and second, the equipment that is bought should be purchased from a company that is prepared to furnish good service in repairs or replacing broken parts. This is most important especially if the department is small and there are only a few machines of each type.

Treatment tables can be made six feet, six inches long; thirty inches wide; and thirty inches high. The tables should have a shelf one foot from the floor. The gymnasium apparatus should consist of a large mirror for posture training, a trapeze, two iron rings, Sayre head sling, a paddle apparatus, and McKenzie apparatus for rigid spines and a pectoral stretching apparatus. The abduction apparatus for shoulder exercise is an eight-foot board, four inches wide, one inch thick, with one-inch steps outside. A wheel five feet in diameter with a handle on it placed against the wall so it will turn, serves as an indicator and for exercise of the shoulder for flexion and extension. A pulley with a rope and weights makes an excellent elbow exerciser. A tapered cone of wood, three feet long, one inch in diameter at one end and four inches in diameter at the other, set between wall supports serves as a wrist and finger exerciser in stiff fingers with limited flexion, going to the narrower part as the condition improves. A stationary bicycle and rowing machine make excellent apparatus for leg exercise. Thus many indicators and exercise apparatus can be made at little cost.

A whirlpool bath can be made by a local plumber from the descriptions given in the books on hydrotherapy. This piece of hydrotherapy equipment will serve for most of the hospitals except those caring for a number of mental or nervous cases, which require an elaborate installation of apparatus for hydrotherapy.

Ultra-violet lamps, high-frequency machines, radiant-heat lights, bakers, infra-red generators, galvanic and sinusoidal machines must be bought from the manufacturers of this type of equipment and the only caution in this buying is to be sure of your service after the machines are bought and installed.

Conclusions

In planning and equipping a hospital physical-therapy department it is wise to remember that this form of therapy is not a specific, but is of great benefit in a vast range of medical and surgical conditions, and therefore a modern hospital should be equipped to furnish this form of treatment to such of their cases as need it. *The only part of this department that can be standardized today is efficient personnel, and without efficient personnel the department will not be a success.* Each hospital will have different problems in establishing this department, and these problems can be solved only by a careful analysis of the whole hospital situation.

CLASS OF 1928. ST. JOSEPH'S HOSPITAL SCHOOL OF NURSING, MARSHFIELD, WIS.

The Physical-Therapy Department of Misericordia Hospital, New York City

IN the fall of 1922, after Sister Marie was appointed as mother superior, her first important work was the establishment of an X-ray department. It was opened for the reception of patients in January, 1923, with equipment and personnel equal to any found in the city. It was not long after that she realized the necessity of establishing a physical-therapy department so as to keep in pace with the leading institutions of this city. The matter was brought to the attention of the medical board, but at that time little interest was shown in this particular line of therapy.

A year later Dr. Schmitt, then president of the medical board, after attending various physiotherapeutic clinics, became much interested and decided to stimulate this interest among the members of the courtesy and regular staffs of the hospital. He therefore arranged to have a staff conference devoted entirely to the subject of physical therapy. This was held on the night of December 9, 1925, before a large gathering. A practical working demonstration was given, the equipment being loaned through the courtesy of an electrical company. A very interesting discussion took place, several of the staff doctors relating their experience with physical therapy. They strongly urged that if physical-therapy apparatus should be installed at the hospital, it should be placed in a special department and used by people who understand thoroughly how to run it.

At the close of the meeting it was the unanimous wish that steps should be taken toward the establishment of a physical-therapy department. Dr. Schmitt therefore named a committee, selecting Dr. Fahnestock as chairman, together with Drs. Butler, Kilbane, Maver, and Schleussner. This committee worked with diligence and speed, and it was not long before final plans were submitted to the board of trustees for approval.

RECORD ROOM, PHYSICAL-THERAPY DEPARTMENT, MISERICORDIA HOSPITAL, NEW YORK CITY.

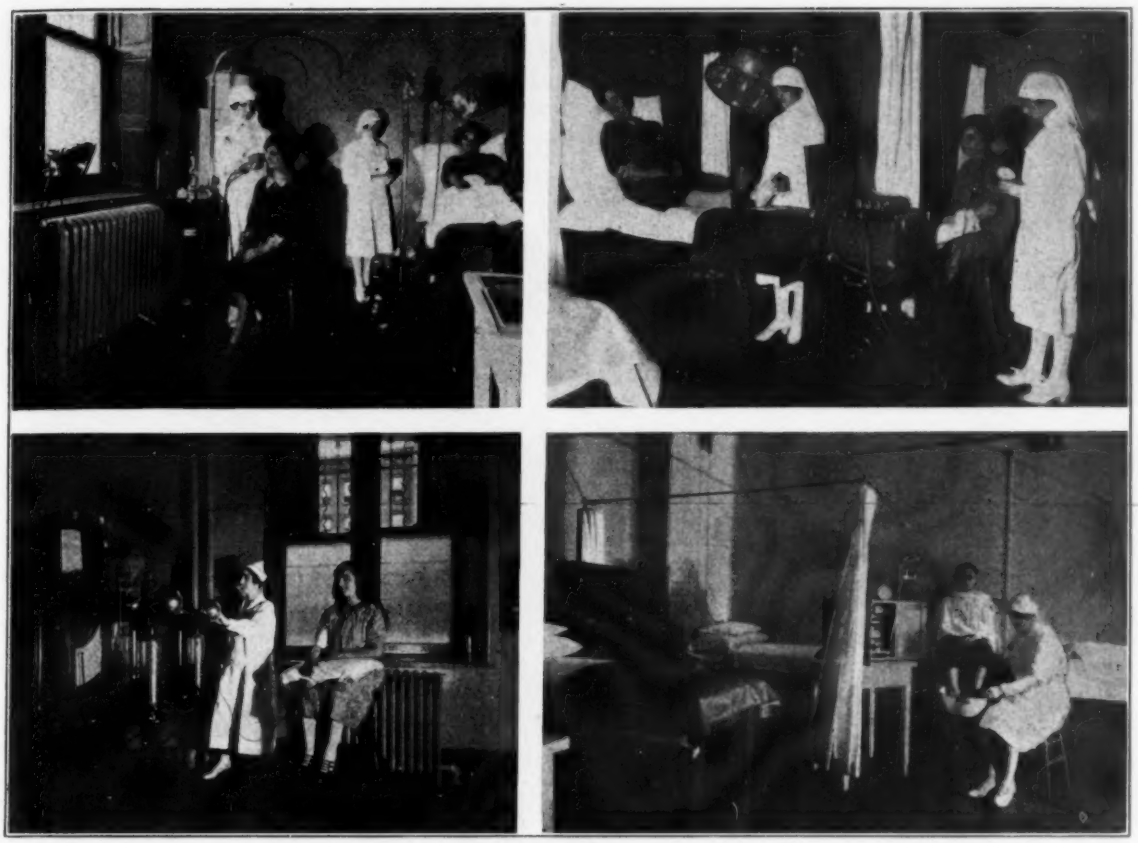
The actual establishment of this department was made possible, however, only through the generosity of Dr. Ernest Fahnestock, chief of our surgical department, who donated the entire equipment with the exception of the static machine. This, through the courtesy of Dr. Norman E. Titus, was donated to the hospital by Mrs. Jacob L. Phillips of New York.

In the same section of the building as the pathological laboratory and X-ray departments, several rooms were thrown into one and a separate entrance to the street was made. This room was divided into ten treatment cubicles and a record room. The ventilation and illumination are as nearly perfect as modern appliances can make them. The accessories include cushioned treatment tables, stools, up-to-date interval timers, electric fans, electric heaters and a waiting room. The technical department contains two high-voltage diathermy machines, a myostat, sine-wave generators, three mercury-quartz air-cooled lamps, a mercury-quartz water-cooled lamp, three carbon-arc lamps, Zoalites, electric bakers, and the static machine.

Since the opening of this department in September, 1926, over 450 patients have been treated. This includes fractures and their sequelae, neuritis, arthritis, osteomyelitis, psoriasis, diabetes, acne, and a number of other conditions, with results which have been most satisfying to the patients and their attending physicians. At first hospital patients only were treated, but later the ambulatory patients became so numerous that we established an outpatient department. This work has been under the direct supervision of Dr. Norman E. Titus and his assistant, Dr. Charles F. Sharry, who have spared neither time nor effort to bring this department up to its present rate of efficiency. Assisting the attending physiotherapist are the Sister-in-charge, Sister St. Margaret, and three graduate nurses, all having had special training in physical therapy, and their daily experience is increasing their efficiency as technicians.

When patients are received for treatment a complete history is taken by the physician in charge, who prescribes the treatment and then makes weekly examinations to note the progress or to vary the treatment as the occasion demands. The nurses keep a complete record of the treatments given, which includes the method used and the time of its use.

As the days go by so many new uses for the department seem to crop up, and so much good seems to be derived from the application of the various treatments, that our staff has shown much gratification and satisfaction. Our doctors are constantly referring to this department a great number of cases which would be relegated, in the days gone past, to the results to be obtained by time, massage, and fond hope. Now, in a



TREATMENTS IN THE PHYSICAL-THERAPY DEPARTMENT, MISERICORDIA HOSPITAL, NEW YORK CITY.

short period of time they see gratifying results to stiffened joints, etc. They see anemic patients pick up rapidly by the use of the arc light. They have noted unsightly skin diseases pass away under the skilled treatment of Dr. Titus and his technicians. So that to these workers in a new field we owe a great debt of thanks for the honor that they add to this hospital by their constant and untiring efforts.

In our next report we will give a detailed account of the conditions treated and the methods used. This will form a valuable report for the future both for reference and for critical study.

Radium in the Modern Hospital[1]

A. James Larkin, M.D.

THE well-equipped hospital should have access to a supply of radium. For the most part radium applications are made to best advantage in the hospital. In the following conditions radium is almost exclusively indicated: Intractable uterine hemorrhage, carcinoma of the uterine cervix, carcinoma of the mouth, and as a palliative measure in carcinoma and sarcoma in many sites. It is of unquestioned value in the leukaemias, Hodgkin's disease, tuberculous glands, ulcers, and sinuses, small uterine fibroids with bleeding, urethral caruncle, uterine polyps, endocervicitis, and as paliative or rarely curative in carcinoma of the rectum, oesophagus, antrum, orbit, naso-pharynx, prostate, bladder, vagina, urethra, and sigmoid. Many non-hospital cases will be attracted to the radium supply of the hospital, among which are the following conditions: Hemangioma, epithelioma, leukoplakia, vernal catarrh, keratosis, warts, moles, corns, nasal polyps, eczema, keloids, and Paget's disease of the nipple.

Radium applications are best made in the hospital because the exposures are frequently too long for office administration, constant trained supervision is at hand, transference from patient to patient is facilitated, and the loss of radium is less frequent. Hospitals containing 200 or more beds are justified in owning their own radium providing that a large proportion of the cases seen by the staff of such hospitals employ the radium in their treatment. Fifty milligrams may serve as a practical unit supplemented by ten milligrams of flat applicators for skin lesions.

In administering the radium supply of a hospital some trained member of the staff may be put in charge whose duties shall be: Consultation with the physician attending the case, making applications or delegating

[1]Read at the Hospital Clinical Congress, Milwaukee, Wis., June 23, 1927. Dr. Larkin's address is 25 East Washington Street, Chicago, Ill.

their application, selection of cases, providing a suitable repository for the radium, making available schedules of its use, supervising case histories as to dosage, accuracy of application, and follow-up records and the making available of monographs, literature, and collected data on radium in general.

Many radium cases have especial features in view of the type of lesion. The problem of prognosis is often one requiring tact and special handling. The reaction and its course are often a study in themselves. Consultation with the specialists must be frequent and conducted along broad-minded lines. The nursing of many radium cases is to be carefully supervised if the radium service is to succeed.

A few economical considerations might not be amiss. A unit of radium containing 60 milligrams costs initially $4,500, its annual upkeep $250, and its annual income should be $1,200. One hundred patients per year paying as low as $12 per treatment for the use of the radium would solve the financial problem. Fees of from $5 to $25 per treatment, $5 for minor cases, and from $10 to $25 for major cases would furnish the income. Free treatments could be given at times when the radium would otherwise be unemployed. The physician applying the radium should receive compensation according to the responsibility and technical difficulties involved in the individual case. Such fees vary properly between $10 and $100, making the total charge to the patient range from $15 to $150 per treatment, a reasonable charge.

Hospitals interested in but not wishing to own radium and those being among the large group in which the ownership would not be practical financially may consider several plans of gaining access to radium as needed. Radium may be obtained for individual cases as needed from the radium-loaning stations. Annual contracts may be entered into with such stations to supply radium when needed. Radion may be purchased for individuals or groups of cases. A consultant in radium may be selected by the staff and all radium transactions may be delegated to him. The hospital as a hospital may encourage the use of radium by its staff members as individuals. Or the hospital may remain aloof from the problem leaving it entirely to the staff.

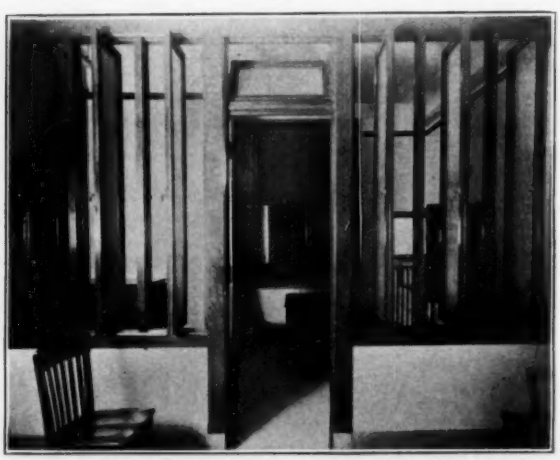
The Value of the X-Ray in Diagnosis

And a Description of the New X-Ray Department of St. John's Hospital, St. Louis, Missouri

By W. T. C.

THE amount of space devoted to laboratory service in the hospital of today is about the surest index of the intelligence, instruction, and desire to give service. It should be one of the chief things in the minds and hearts of those who control the institution.

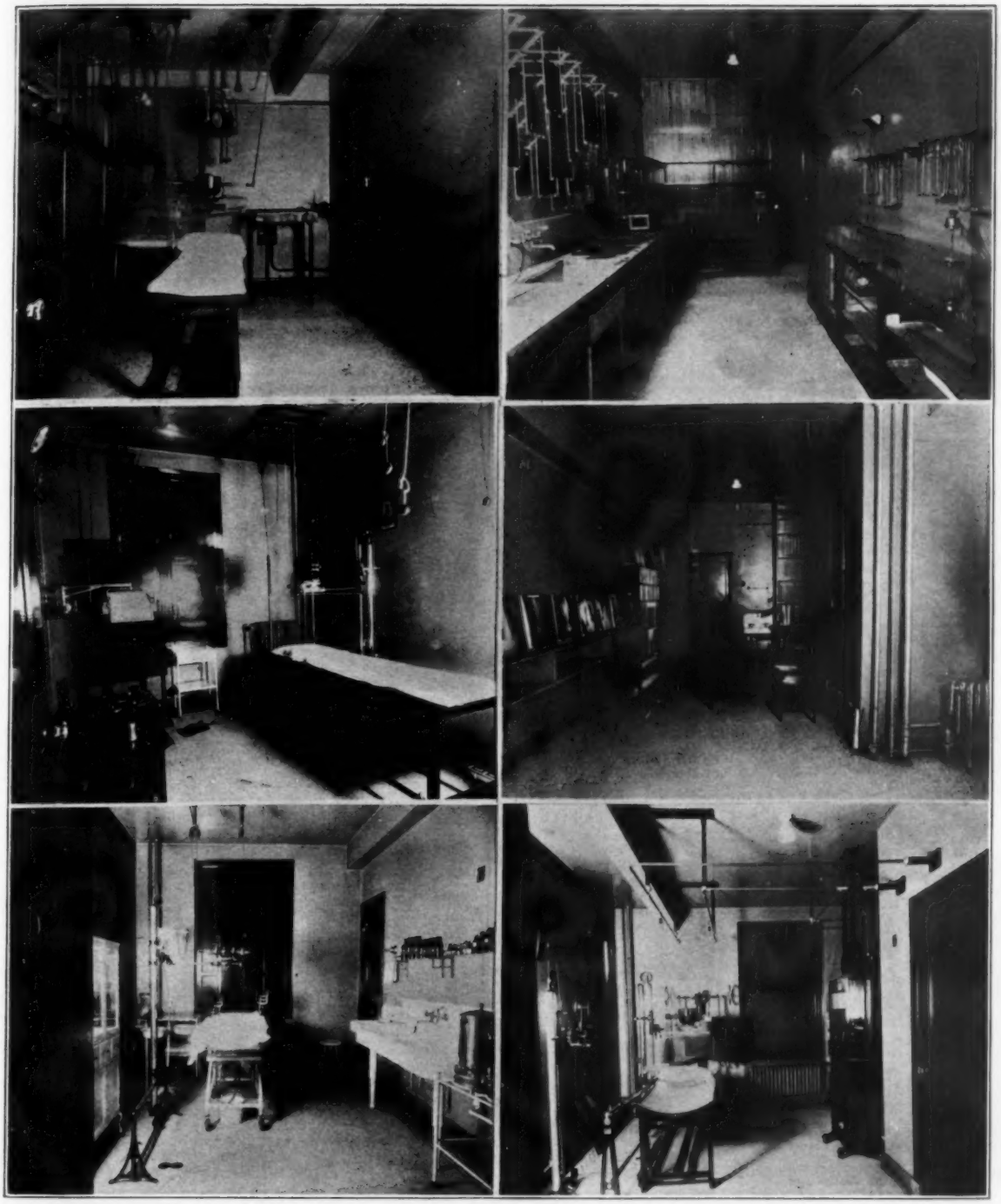
As an example of the advantage of the hospital over the home, we need only refer to the use of X-ray equipment. How few of the laity know anything of the part played by this modern and mysterious agent in the diagnosis and treatment of disease today, and how few also of them know that in order for the patient to get all that is possible out of his X-ray examination, the examination must be made by a physician, skilled in its use—that not one physician in a hundred can take an X-ray picture, or use the fluoroscopic screen, or properly interpret all that the picture shows. Does the patient know how much reliance the greatest physicians and surgeons the world over place on the X-ray in diagnosing and setting fractures, in locating foreign bodies, in the diagnosis of early tuberculosis, pleurisy, aneurism, and abscess of the lung? Does he know that long before the ear of the doctor can detect the site and size of the pneumonia, the good X-ray expert can locate it, and in pictures made at intervals of three hours, can tell exactly how the case is going. No guesswork—he knows.



PHYSICAL-THERAPY DEPARTMENT, ST. JOHN'S HOSPITAL, ST. LOUIS, MO. ROOM E: RECEPTION ROOM.

Almost every layman who can read, knows that consumption is curable only in its very earliest stages, but most people do not know that by means of the X-ray, the diagnosis of consumption (tuberculosis) can be positively made, long before it can be more than guessed at, by the usual examination—but can an ordinary physician make these diagnoses? He can not.

What has discredited the X-ray in the eyes of the lay person, is its exploitation by the dishonest doctor, the quack, or advertising self-styled specialist. The ordinary individual can no more tell who is the qualified X-ray expert than he can tell who is the qualified physician or surgeon. But the hospital which wishes to be



PHYSICAL-THERAPY DEPARTMENT, ST. JOHN'S HOSPITAL, ST. LOUIS, MO.

Room A. Deep X-Ray Therapy.
Room D: Fluorscopy.
Room F: Genitourinary Examination.
Room G: Dark Room.
Room H: View Room.
Room C: General Radiography.

known as a first-class (Class A) hospital must know these things—and the hospital knows through its medical and surgical staff, who the qualified experts in any of the branches are.

The Sisters of Mercy who own and operate St. John's Hospital, have since their beginning, relied on the faculty of some medical school to select their staff and control the medical care of the patients in their institution. The Missouri Medical College, the Washington University Medical School, and the St. Louis University Medical School, have each in turn, guided the medical and surgical destinies of St. John's Hospital, and the aid that the Sisters of Mercy, in charge of St. John's Hospital, have given in the teaching of medicine in this city for now more than forty years, is a cause for gratitude from all, both the laity and the

medical profession, not only of this city, but of this great southwest.

Quick to take advantage of all that science has found helpful, St. John's installed an X-ray department in the hospital at 23rd and Locust Streets in 1904, under one of the foremost surgeons and X-ray pioneers of St. Louis, A. V. L. Brokaw. At that time, only one other hospital in St. Louis was equipped with X-ray apparatus.

When the new hospital was built at its present location at Euclid Avenue and Parkview, a great deal of space was set aside for the X-ray laboratory, and a fund was subscribed by the friends of the late Doctor A. V. L. Brokaw; the X-ray department at St. John's has since been known as the Brokaw Laboratory. When the new high-voltage type of machine was developed for the treatment of cancers and tumors, St. John's was the first private hospital in St. Louis to install this type of machine.

Although everyone using the X-ray was alive to its importance as an aid in the treatment of fractures, it was a very difficult matter to ascertain how the fracture once set was healing in position, unless the patient could be brought to the X-ray room. The war made popular a method of treating fractures that made it necessary to bring the X-ray machine to the bed of the patient, and a portable or bedside X-ray was invented. St. John's was the first hospital in St. Louis to install one of these. It has now been in use there since 1918, and pictures of any part of the body can be taken without taking the patient out of bed or out of his room.

Recently the hospital has enlarged and reequipped its X-ray department. The space is all on the first floor in the west half of the south wing. There are eight rooms all together, besides dressing rooms, covering 2,040 square feet of floor space. A is the room where the deep X-ray machine (called the big one) is installed. Here are given the treatments for cancer, fibroids, etc. The patient lies on the table, all protected by leaden draperies. The operator stands in Room B, separated from A by a lead-glass partition, so that the rays cannot affect him. Only the part to be treated is exposed to the ray, and, almost incredible, the ray, although it passes through the skin, does so without burning it or injuring it in any way, for the operator protects it by certain devices, understood only by him.

Room D is devoted to fluoroscopic examination and there are two machines, one for the sitting or standing, the other for the lying position. The patient is placed in position, the room is darkened, the operator places a screen in front of the patient and stands looking at the screen. The X-ray light is behind the patient. When it is turned on, it shines through the patient and is seen a greenish glow on the screen. The bones cast a shadow as do certain diseased parts. Then by giving the patient certain opaque substances by mouth, or into his veins, the operator can see the shadow cast by these, as they lie in the patient's body. He knows where these substances ought to be in a given time, in the normal, and how they ought to look, and he sees how they are, and if abnormal, why so; with the fluoroscope, much more can be learned in a short time, than by pictures, when an expert does the work.

A seven-inch X-ray machine is used in conjunction with this room exclusively (radiograms may be made in this room). In an adjoining room, the radiograms are routinely made. This room is equipped with an X-ray machine, a Bucky-diaphragm table, an automatic stereoscopic-plate changer, for taking chests in the upright position—which are done in one tenth of a second —and a hundred-milliampere X-ray tube, the first tube of this kind in any hospital in St. Louis.

There is a reception room for patients who are waiting, and a private office for the roentgenologist. The next room is used entirely for the X-ray examina- of the genito-urinary tract. This room is equipped with a cystoscopic Bucky-diaphragm X-ray table on which the patients are cystoscoped and X-rayed, without being moved from the table. It contains a seven-inch X-ray machine for the exclusive use of this room. The room is fully equipped with all apparatus incident to the cystoscopic examination of a patient, such as sterilizers, irrigators, etc. The examination of the genital tract is done in this room, such as lipiodol injection of uterus and tubes for the determination of the patency of the tubes.

There is a large, well-ventilated, dark room, which contains a table fourteen feet long, for the loading and unloading of films, and which contains a separate compartment for unused films. In this room, there is also a very ingenious built-in, film-developing unit. In this unit, there are a large soapstone drain board, sink, developing and fixing tanks, and wash-water compartment, all enclosed in a built-in soapstone enclosure. The tanks are connected with running hot and cold and ice water, all passing through a mixing valve, which regulates the temperature of the solutions.

The next room is a large exhibition room, where there are numerous shadow boxes, and a stereoscope for the purpose of viewing the finished films. The last room contains an X-ray deep-therapy machine, capable of delivering 300,000 volts at 30 milliamperes. Conveniently connected with these rooms there are toilets and dressing rooms. The equipment is new and modern in every respect, and capable of doing any, and all types of X-ray work.

The personnel consists of a Sister, a radiologist, who is a graduate M. D., a full-time technician of seven years' experience, a nurse, a stenographer, and an orderly. A room has also been set aside in this section for the physiotherapy treatments, including the diathermia, violet-ray, etc., and is in charge of a Sister.

Civil Service Examination. Application for junior medical officer (intern) will be rated as received by the Civil Service Commission at Washington, D. C., until Dec. 30, 1927.

The Editor's Pictorial Notebook

Nurses' Dining Room, St. Mary's Hospital, Kansas City, Kansas.
Where Pere Marquette First Said Mass in Chicago.
Scene from St. Catherine's Hospital, Kenosha, Wis.
Desert Sanatorium, Tucson, Arizona.
Group of Delegates to Convention of Penn. Conference of the Catholic Hospital Assoc., Dallas, Penn., 1927.
The Grand Portal, San Xavier Mission, Tucson, Arizona.
Nurses' Home, Marquette University Hospital, Milwaukee, Wis.
Scene from Nurses' Home, St. Mary's Hospital, Kansas City, Kans.
A Cozy Corner, Holy Cross Hospital, Salt Lake City, Utah.
Loyola College, Los Angeles, Calif.
Chapel, Misericordia Hospital, New York City, During 40 hrs. Devotion.
Group of Student Nurses, St. Joseph's Hospital, Omaha, Nebr.

Hospital Progress

EDITORIAL EXECUTIVE COMMITTEE

Rev. C. B. Moulinier, Milwaukee, Wis., Chairman.
Rev. Edward F. Garesché, Milwaukee, Wis., Editorial Director.
Edward Evans, M.D., La Crosse, Wis.
Edward L. Tuohy, M.D., Duluth, Minn.
Edward A. Fitzpatrick, Ph.D., Milwaukee, Wis.
William C. Bruce, Milwaukee, Wis.

THE PROFESSIONAL SPIRIT

The Professions! A certain dignity breathes from the word. Professional folk are, in a sense, a privileged class, and command a respect to which business, trade, manual labor, do not in themselves lay claim. What is the source of this particular deference paid to the learned professions? Different men of analytic mind have tried to explain it.

The possession of learning is in itself of course a title to a certain deference. Learning is power, is dominion in the things of the mind. Because professional men and women possess a special knowledge, not common to the rest of mankind, they are in so far esteemed by their fellows. But the mere possession of learning is not enough, in itself, to explain all the esteem in which they are held. A physician, for example, may be extremely learned, and yet may forfeit the respect of men by his loose principles, his vicious character as a doctor. Something more than learning is the reason of the esteem given to the professions. It is based also on character.

Ruskin, if we remember rightly, declares that the professions are honored because those who follow them are always ready to die in the discharge of their duty. The soldier is prepared to sacrifice his life for his country. The priest is ready to give his, for the salvation of men's souls. So is the lawyer, for justice, the physician, for the lives of those who place themselves under his charge. This spirit does indeed suppose nobility of character of a high degree. No wonder that men honor those whom they deem ready to give life itself for the sake of the service they offer to their fellow men. Faithfulness unto death is expected of the men and women who assume toward others the character of the guardian of things more precious to them than any other possessions—of their souls, of their fatherland, of justice, of health and life.

The doctor and the nurse, when they perceive that honor is given them for the sake of their profession, will be stimulated thereby to the highest degree of professional service. An old phrase declares, *"Noblesse oblige"* and though this is difficult to render into English, a good translation of it could perhaps be: "Nobility imposes obligations." Those who receive honor must deserve honor. Those who hold a dignified place in the confidence of their fellow men must be worthy of trust. Applying these reflections to the members of the medical and nursing professions, in whose care men put themselves and those most dear to them in seasons of sickness, no one can fail to draw a pregnant consequence. To them, more than to others, "Noblesse oblige." The honor given them imposes obligations. —*E. F. G.*

INTERPROFESSIONAL ASSOCIATION

The Medical Journal and Record for March 16, 1927, printed an address of Nicholas Murray Butler, president of Columbia University, delivered before the New York Academy of Medicine. The address was entitled "The Physician—The Larger View."

In the course of his talk, Dr. Butler said: "One of the things which it is increasingly necessary to do in our intellectual life is to break down the traditional barriers between intellectual occupations and activities, to make it clear that they are not separate and distinct and, as many think, conflicting, but that they are interdependent, closely associated, and overlapping."

Commenting on this notable address, the *Association of Professional Men's Clubs Quarterly* remarks: "It is heartening to find so conspicuous a leader in the cause of education taking so strong a position on this matter of interprofessional thought and training."

The doctor, the lawyer, the nurse, the teacher, the writer, and some others have a bond of fellowship in their professional character. All these are engaged in doing for mankind what ordinary mortals cannot do for themselves. They are those, whose services the civilized world cannot dispense with. In fact, even poor savages try to find men and women to act as makeshift professional people.

The ideal attitude of all professional workers toward their work and toward their fellowmen is that of the noblest profession of all, the sacred ministry. That attitude is the determination to minister to the needs of one's fellows, and to do so for the love of God.

For the solution of their problems, the members of one profession need the expert counsel of those of other callings, just as the general public needs the service now of one and now of another of the learned professions. And professional people need for their own spiritual and mental growth association with others who share their attitude toward life and its obligations.—*E. W. R.*

THE WITNESS OF AN OLD TOMB

The *New York Times Book Review* in its issue of May 8, 1927, publishes an interesting review of the report of Dr. Howard Carter on the findings in the famous tomb of Tut-ankh-Amen. This tomb, which was preserved for more than thirty centuries, has afforded a marvelous scientific opportunity. Though much of the treasure of the tomb has already begun to fall into dust, now that it has been taken out of the dry darkness which has preserved it for so many centuries, still these objects have been photographed and studied, so that science will preserve the record of their teachings. In this connection, the reviewer has interesting comments to make upon the changelessness of man and of nature which is evidenced by this ancient tomb.

"One overwhelming conclusion appears to be unavoidable. Here has been an experiment in biology, in psychology, in botany, in chemistry, that began 3,300 years ago and only ended yesterday. It has shown that, within that period, there has been no discoverable change of any kind whatever, in the mind and body, whether of man or beast, in the nature of matter or in the structure of flowers. The lion with the red ivory tongue is the lion that you may see on the Bronx. The duck at which Tut-ankh-Amen directed his arrow is the duck eaten for lunch on the Boston Post Road. The flowers in the garlands like the feathers on the fans can be precisely identified. The food, provided for the dead, is a little stale, but similar food, cooked today, would sustain life."

A little further on the reviewer continues, "The question often asked has been whether religion will accept the evidence of the rocks. Today the question is whether evolution will accept the evidence of the tombs. Whatever may have been this process at the outset, it ceased in the case of man ten thousand years ago. Not only has man failed within that period to add a cubit unto his stature, but he is only beginning to recover the legendary longevity of the patriarchs which he has lost."

As science develops, more and more men grow more and more chary of taking mere theories as facts. They will reserve their judgment until the evidence of new facts is strong enough to justify a moral certainty. When that happy day arrives, there will be no conflict, even an apparent one, between different orders of truth, for truth can never conflict with truth, nor can fact ever be marshalled against fact.—*E. F. G.*

THE MOST PROFITABLE EXPENDITURES

Some items of hospital cost for maintenance and equipment are fixed and definite and unavoidable—food, heating, the essentials of hospital supplies go on like Tennyson's brook, "Forever, and forever." But there are other needs, not so standardized nor so insistent, which are really of great importance in lifting the hospital out of the ordinary and giving it distinction and standing. It is these special expenditures which ought, from time to time, to receive the attention of the hospital executives. If they are not dwelt on and planned for, they will be crowded out by other, more insistent, but perhaps less important, needs.

One such department of expenditure is that for the intellectual life of the hospital. Books, lectures, conferences, ought to be supplied lavishly and with a fair expenditure of money and effort. If extravagance is ever justified, it is justified here. But, as a matter of fact, no ordinary expenditure of money for such purposes will ever be more than a small item in the vast sum total of hospital accounting.

At present our hospitals are deplorably parsimonious in this matter. The item of expenditure for intellectual needs is almost nothing. What is given out for books and lectures in the course of a year is not one-hundredth of one per cent, in most instances, of the total hospital expenditure. This is evidently quite wrong and it is pitiful when one considers the intellectual needs of hospital workers, not to speak of the patients, who should also be plentifully supplied with books. Then again, the true beauty of a hospital and its atmosphere of religious charm likewise demand some expenditure of money and care. Here, again, the good that would result is out of all proportion to the effort and expense, yet how many hospitals are as bare as barracks of any real religious beauty and charm.

Vast sums are spent in other things, but absolute stinginess prevails where there is question of beautifying the hospital, or at least the work is done without due planning. The hospital executive and everyone who has to do with the interests of the hospital should make it a point to be generous in these items of expenditure. Indeed, it would be well to try one's best to be extravagant in such things. For it is only by leaning a little too far in the other direction that we shall ever overcome the tradition that exists in too many hospitals to be parsimonious in matters that affect the interests of the hospital which we have above described.—*E. F. G.*

ROUTINE

Nothing is more deadening to the hospital worker, from the standpoint especially of intellectual progress, than is what we call "routine." Routine is the habit of doing the same thing in the same way, because we have done it that way before, without much intellectual activity, and this persistent habit has the effect of gradually drying up intellectual energy and making one's work a soulless, mechanical thing. Routine is a labor-saving sort of affair, because the habit of doing the same thing in the same way makes it easier to do that same thing in that same way the next time. It saves time, thought, reflection. A person who gets into the habit of doing the same thing at the same time because it has been done that way before is spared a great deal of planning. But progress ceases for the person who is the slave of routine. Thought also tends to cease.

Now, since hospital work requires a great deal of intelligent thought and care for its real progress, it follows that nobody can possibly be a good hospital worker in the full sense of the word, a progressive, active, interested hospital worker, if he is a slave to routine. The remedies for routine are study, thought, self examination, planning; going back over one's work and reflecting whether it has been well done or poorly done. The spirit of progress, the desire to do new things or old things in a better way, is also an antidote against routine. To be really interested in one's work, enthusiastic about it, always studying, observing, trying to discover new methods, places routine where it can do no harm.

You certainly need to be on your guard against this spirit in hospital work, for few things are more deadening and disheartening to others, more harmful and weakening to the hospital worker than constant routine.—*E. F. G.*

Special Examinations and the Duties of the Roentgenologist in Cooperating With Such Requests[1]

H. B. Podlasky, M.D., Milwaukee, Wis.

THERE are two methods of examination in roentgenology. One is referred to as fluoroscopic and the other as roentgenographic. The fluoroscopic obviously offers a variety of views to the examiner, as he can, at will, observe the patient in practically all planes, depending somewhat on the patient's condition.

Unfortunately the mechanisms of fluoroscopy are limited and the greatest accuracy cannot be obtained by its use in all conditions. It becomes the duty of the roentgenologist to point out the limitations of this method and suggest the use of roentgenographic procedures.

Roentgenographic examinations offer a wide and useful scope in the quest of pathology. This division may be properly subdivided into:

1. Standard positions as outlined in the various manuals of technic.
2. Special positions.
3. Special examinations which require instrumentations, drugs, dyes, etc.

It is with the latter two methods that the roentgenologist finds the greatest concern. To enumerate a few of the procedures, such as stereoscopic views, double exposures on one film, special positions for inflations, lipiodol injections in gynecological, spinal cord, and chest cases, is to give some idea of the vast field covered. In this connection one must not forget pneumoperitoneum and ventriculography.

Send Diagnosis to Roentgenologist

In reference to special examination there comes to mind several inconsistencies as they occur in practice. In practically all hospitals the roentgen department insists on the use of blanks upon which may be written the orders to the X-ray workers for certain things to be done or for certain examinations to be made. This blank, among other things, provides for the clinical diagnosis to be filled in by the referring physician. Unfortunately the diagnosis is very often omitted. In place of this, however, we are told to take a lateral view, an anterior view or, in the case of the very erudite, a stereoscopic view.

How much more logical and in keeping with sane and conservative medical practice would it be if the clinicians or surgeons stated their diagnosis and left the *modus operandi* of the roentgen examination to the person employed by an institution to conduct such an examination. Is it expected that a referring physician will dictate to a surgeon the manner of operating or choice of operation? Is it not a fact that the surgeon is selected on the grounds of confidence and ability? If the same amount of confidence cannot be placed upon a roentgenologist, such a person should be replaced by one who can command respect solely upon his professional qualifications. This being a fundamental principle in the practice of medicine, it is very strange that in some hospitals the roentgenologist is not considered as a consultant, limited, of course, as would be an orthopedist, an oculist, or a cystoscopist in a similar manner. Every medical man limiting his work to a special field is expected by his confreres to be familiar with the diagnostic armaments of his specialty. In other words, the roentgenologist requests: "Name the disease or state the location of suspected pathology and I shall bring all methods into use which will prove, disprove, or assist in supporting your clinical contention." To be limited in an examination because the cost of such special work is prohibitive is not a sound argument. Patients requiring such attention are provided for by special agencies if they are destitute, and other classes must be taken care of on a part-pay basis.

Study and Skill Necessary

It may appear that all the difficulties thus far considered are entirely to be placed at the door of our medical colleagues. This is not at all a fair summation of the problem. If we, as roentgenologists, stop to contemplate the vastness of our specialty as it applies to medicine, the magnitude of our responsibilities is quite staggering. Are we in a position to give as much as is expected of us? To keep abreast of accumulating work in all branches of medicine and surgery is indeed a colossal task. It is far better to know a few procedures well than just a little of each one of a great many. Admission of one's limitations is not often necessary. Our medical confreres are quick to judge our aptitude as well as our shortcomings in their various fields. We must, therefore, be strictly honest in our interpretations which border on clinical diagnosis. Adhering strictly to rock-bound conservatism in our reports to physicians, we may then expect from them a cooperative spirit, appreciation, and an opportunity to discuss with them their clinical problems as they affect our work in the case of each patient.

SM—9-25

MOUNT SINAI HOSPITAL

Case No ..... Date .....

Dr. ..... requests the

RÖNTGEN RAY DEPARTMENT

to { examine / treat } the ..... (Part of Body)

of ..... Ward ..... Bed .....
Name of Patient

Room ..... Bed .....

Clinical Diagnosis .....

.....

Patient can ..... walk; can ..... stand up, can ..... sit up.

Special point for consideration by the Roentgenologist .....

.....

Patient was examined on .....

Reason for this examination .....

Has patient dressings, bandages, splints or packings? .....

If so, what kind? .....

May these be removed? .....

.....
House Physician-Surgeon.

RECEIVED BY ROENTGEN DEPARTMENT .....

.....

WILL BE DONE .....

To be filled out by Roentgen Dept. ONLY.

A REQUEST FOR X-RAY EXAMINATION OR TREATMENT TO BE FILLED OUT BY ATTENDING PHYSICIAN OR SURGEON.

[1]Read at the Hospital Clinical Congress, Milwaukee, Wis., June 22, 1927. Dr. Podlasky is an associate clinical professor of roentgenology, director of the department of roentgenology, Marquette University, Milwaukee, Wis.

As roentgenologists we must admit that ventriculography is only partially our job. It is generally considered largely a surgical problem. As such we must cooperate and take the necessary instruction from a surgeon skilled in its use.

Follow Physician's Advice

In cases of suspected gall-bladder pathology, it is not prudent to insist on employing the intravenous method of dye injection, in the face of serious clinical objections on the part of the attending physician. It is superfluous to add, that though one is partial to the above method, use of the oral method is supported by many authorities, the latter method being a direct contribution to roentgenology by a roentgenologist. The cooperation of a clinician in weighing the importance of contraindications is of inestimable value. Gynecological problems offer the same opportunity for caution. These methods were developed by clinicians largely, and such examinations had best be made with their close cooperation.

The technical requirements of a gastrointestinal examination on the other hand, are fairly well established roentgenographically. It is reasonable, in view of present-day experiences, to assume that the differential diagnosis between cholecystitis, ulcer, and appendicitis is not always very clear. An astounding number of instances occur where the clinician desires to limit the examination to the stomach alone or gall bladder, etc., as the case may be. Such limited work is very harmful. Errors are made because the field has been insufficiently covered. The work of Pfahler, Case, Cole, and Arens amply prove this contention.

These examples may serve, perhaps, to illustrate the shortcomings of all of us who attempt to utilize so helpful an agent as the X-ray. It is not necessary to enumerate the many individual cases that might have been deciphered had cooperation been the rule rather than the exception.

May we not hope that some day, in the not-too-distant future, hospital boards and superintendents will accord the proper status and privileges to the roentgenologist which are his by inherent right as a physician?

An Example of a Monthly X-ray Report

Charges	(Pay)	(Part and Full)
Charges	(Free)	
Films		
Therapy		
Fluoroscopic		
Physiotherapy Treatments	(Pay)	
Physiotherapy Treatments	(Free)	
Expenses		
Plates		
Developing Powder		
Salary		
Receipts		
Receipts for May Charges		
Receipts for Previous Charges		
Disbursements (Material and Repairs)		

The Relation of Physical Therapy to Industrial-Insurance Work[1]

Chas. P. Hutchins, M.D., President American Academy of Physical Therapy

The Compensation Principle

INSURANCE is an intersocial pledge of compliance with the stipulations and covenant of the provisions of the law, that provide both therapeutic and financial remedy for the physical misfortunes arising out of employment. The New York statute reads: "Such medical, surgical or other attendance or treatment . . . . for such period as the nature of the injury or the process of recovery may require." Nothing could express more plainly the conveyance to the claimant of skill and completeness in his treatment in as full measures as financial benefits are stipulated. And it is for the physician to appreciate the surgical and physiotherapeutic possibilities, or else to announce the inevitable.

The second extrinsic factor is the relation of permanent partial disability to economy of production. By this I mean the loading on prime cost of manufacture of incurred compensation and labor turnover, which operate as experience charges, first, upon individual plants, and, second, upon others in the same classification. If this percentage is susceptible of reduction where there has been no essential loss of structure, it follows that industrial surgery and physiotherapy must effect the saving.

To those who have kept abreast of events, it must be clear that there is in existence a machinery of medical effort and organization that parallels in industry the exertion for production and with its work for the betterment of mankind is cooperating intimately in the husbandry of man power.

In large manufacturing establishments adequate provision can be readily made in the budgets for high-class surgical service without prohibitive cost, just as municipalities enjoy the conveniences of water supply, fire protection, and police protection denied to sparsely settled districts. But it so happens that all manufacturing is not on a large scale; that construction work is transient; that water power and source of supply draw many activities from the centers of habitation to the frontiers. Let who will insist that business is not eleemosynary; that production waits not for those who fall by the way. Reclamation with discrimination is a matter of dollars and cents.

In the years before industrial injury became a statutory charge upon the cost of commodities, no one was particularly concerned about the unfortunate and his precarious remedy under employer's liability except his immediate circle. Today the injury is the warrant; not the workman a petitioner. Without doubt the compensation principle has raised up a class who see in it an opportunity rather than a partial insurance against loss.

Management is vitally interested in every expense of the finished product.

The premiums of workmen's compensation insurance form a part of the cost of operation. These are primarily basic; that is, they are based upon the classifications of the work in which each operative is engaged and the rate is promulgated in accordance with the hazard of the occupation. This is known as the manual rate.

The entire trend is toward conservation. The compensation principle has, in large measure, brought this to pass and today wise and shrewd management in industry has come to recognize that economy in production cost relating to human machinery is favorably affected by:

1. Measures to prevent accident.
2. First-aid facilities to prevent infection.
3. Intelligent surgery to conserve structure.
4. Rehabilitation methods to conserve function.

Of particular concern to us is the last step in the attempted restitution of the damaged part. So far as physiotherapy and its interpreters are potent in supple-

[1]Read at the Hospital Clinical Congress, Milwaukee, Wis., June 23, 1927. Dr. Hutchins is president of the American Academy of Physical Therapy.

menting surgical skill, so far will it—and they—win recognition not only for service to the bread-winning of mankind but for saving to industry in continuity of work and expense of operation; and the saving to industry is expressed in dollars and cents. It shows on the ledger and can be calculated with little or no error by the clerical force. Omit for the time the appeal to humanitarian impulses or arguments. Reduce the problem of restored or improved function to the balance sheet and make physiotherapy prove its claim of service to industry—not to the welfare department but to the executive who must account to the stockholders. Since the indemnities provided by law for disability and loss of use of members fall short of compensating the injured for diminished earning power, it is manifest that the benefit accruing to him from physiotherapeutic accomplishment exceeds the monetary saving by that much.

Physical Therapy as a Means to Reclamation

Thus we locate the function of physical therapy in industrial medicine. It may perform as much for the conservation of mechanics of human forces as conservative surgery for the salvage of individual parts. Physiotherapy is a treatment department. Its sphere of action is to supplement the technic of the surgeon, the materia medica of the internist, and the appliances of the orthopedist. The diligent toiler regards the inactivity resulting from his injury as a misfortune to be endured for only such a period as absolutely necessary for his repair. Be his solicitude due to pain, diminished income, enforced idleness, or disheartenment over the importance of impairment, his eagerness to resume duty is sincere. The problem of his return to work is wholly physical and his affair mechanical.

So, that when the wounds are healed and the surgeon pronounces his services completed, the man regards such functional incapacity from pain or joint stiffness as may remain as totally incompatible with the demands of his trade. The injunction to "go ahead and use it" is not reassuring to the man with a shoulder painful on extremes of motion or with a hand that will not take a firm grip on a hammer. Discharge by the physician is in a multitude of cases the crucial point in the workman's confidence in his earning power. Is healing to be the end result? In major cases at least the gap between repair and resumption must be bridged by reclamation. Physical therapy is, therefore, the link between enforced rest and voluntary action. Small wonder is it that the hope of comfort and functional control suggested by rehabilitation has been seized with avidity and zeal. "Back to work" meaning the same trade means far more than again to work.

There is no legal obligation upon the claimant in industrial injuries to accept treatment of any kind. Refusal does not prejudice his monetary rights. The vast majority of injured workmen, however, prefer recovery to benefits. They resent, and justly so, the divergence of their cash demands for farcical restoratives and suppositious reduction of disability.

The limitations of physical therapy in industry are not yet defined. Physical modalities are no more a panacea than other remedial agents or measures. Stripped of egotism and extravagance, rational employment of heat, light, water, high- and low-potential currents and manipulation perform service not within the sphere of surgery, medicinal agents, or particular cults.

There must be reason for its being as a branch of medical science in close affiliation with surgery when Sir Robert Jones defines the governing principles of "treatment, whether operative, manipulative, or educational," to be those directed to functional success.

It simmers down to the premise that instruments of precision are valueless except in precise hands, and since unintelligent prescription of efficient procedures inspires a sense of security that is false, it is needless to accentuate that physical therapy whenever brought to the aid of the surgeon in restoring function must command equal foundation experience and equal grasp of the causative factors of disability and their amenability to treatment.

The reciprocal relation of surgery and physical therapy in traumatic cases was born in the reconstruction hospitals and has been nurtured by the provisions for medical benefits of compensation laws.

The introductions resulting have not invariably made partners. Acquaintanceship and cooperation depend on common understanding and mutual trust. Since no branch of medical science is omnipotent, we find the most faithful achievement of medicine and surgery in those hospitals that exhibit the broad spirit of correlation of services. We are considering the damage done to human machinery, the exigent surgical intervention, and the part physical therapy may play in making function as ample as tissue destruction salvaged by good surgery will admit. With the therapeutic uses of physical measures that belong to other branches of medicine this paper is not concerned.

Among the leaders of surgical thought, Whitman characterizes treatment as the "final adaptation of the disabled member to the function for which it may be capable." Manipulation and educational exercises are "no longer a mere routine" but lead with other physical therapeutics "up to the idea of fitness"—a capacity for work. Ryerson at a meeting of the American Orthopedic Association stated that the "work of the physiotherapeutists has emphasized the need of active and passive movements of the joints at earlier periods than has been the custom of many surgeons." He further contended that "the function of a hand can be brought to the normal three or four weeks earlier, if movements and physical therapy be used." Ochsner in his treatise on fractures characterizes physical therapy as invaluable in this class of injuries in preventing stiff joints, wasted muscles, and poor circulation. Aside from the contraindication of acute sepsis, he advocates early reference to the physiotherapist for better preservation of nutrition.

Sir Robert Jones devotes four chapters of his work on orthopedic surgery of injuries to the application of electricity, water, massage, and physical exercises in the pre- and postoperative care of orthopedic patients. Collaborating therein, Bristow styles them an essential part of treatment.

Physical measures are no more potent than medicinal or chirurgical, and they depend for success upon the same discriminating selection as attends the exhibition of the other branches of medical science. As elements they are not new. All are vital forces harnessed for application to distinct pathological conditions. What is ultra-violet energy but actinic sunlight stripped of cloud, luminosity, and absorption and always at hand? If electrotherapy has here and there been an instrument of exploitation for a livelihood, let us recall that the gunshot prescription is not so far in the buried past. If massage has been largely outside the ramparts of the profession and administered on vague concepts of pathology, its exclusion from individual medical armamentaria has not denied it public confidence. In justice to the disciples of Ling, more than one has expressed to me the regret that his ignorance of pathology and the physician's unfamiliarity with the effects of manipulation and muscle action frustrated exact therapeutic effects. By right of rational thought, by right of principle, they have a place that no other measures can challenge; now, by right of accomplishment in a hun-

dred thousand cases of war injury and an ever-increasing service to industry, they have won their place in the regular curricula of medical pursuits.

Physical therapy has attained some reputation in the curtailment of compensation costs. Under the same name, in casual hands or under casual titles, in instances more opportune than sapient, it has provoked skepticism, disappointment, and even opprobrium. There is nothing bizarre about this. Many another meritorious concept has been stultified here and there by the exploitations of the unsophisticated. This is no more true of physical therapy than of surgery or ophthalmology. To the point that a little learning is a dangerous thing, experience, persistent application, and sincerity will feel the derogation of those who hoist the red flag of commercialism over the stately craft of medicine.

The compensation commissions are learning enough about physical therapy to regularly inquire if physical measures have been used to attain the maximum restoration. The laity is not always discriminating. As has been indicated when physical therapy ministers to the industrially injured, the interests served, that is, the employers and insurance carriers, however, are more astute. When anatomical repair is complete and the claimant appears before the commission for examination, the practice is for the medical examiner to determine if disability has ended or if further treatment can improve function. Unless the examiners are physiotherapeutically trained, failure to differentiate may lead to error, and this in turn to increased treatment cost without comfort to the patient or corresponding reduction in percentage loss of use. Employer and insurance carrier—the responsible parties—are vexed and lay their remonstrance at the door of the physiotherapeutist. If he accepts the case without clear concept of the pathology and the response of that pathology to definite physical modalities, he has earned distrust and his arrogated knowledge has brought somewhat of disrepute upon discriminating men and methods. It should not be a part of our calculation in this field that any examiner would exaggerate an existing disability so that a later opinion might show a lower percentage and justify the increased medical attention. Presuming, rather than unscrupulous, practitioners are being discovered by insurance adjusters as time goes on and are being thrown into the discard of this type of practice, for they are an expensive luxury. But the physiotherapeutist who will not hesitate to reject the case that is not susceptible to treatment and who will return it for final adjustment the moment it fails to show progress, will win and hold the confidence and approbation of the financial interests and the gratitude of the man who would not trade a stiff finger for the price of a Ford car.

The compensation courts encounter thousands of cases that have received unimpeachable surgical attention and have been discharged. There remains definite inability to use the part, or to do so produces pain, or there is a loss of muscular power. Without intelligent guidance and ministration, these patients lose heart in the belief that the surgeon's dismissal indicates a permanent handicap. It is inevitable that some of these should find their way into the hands of peddlers of physical modalities and the "laying on of hands," although the commission seeks to safeguard them. Sophistication and affectation of knowledge and technic quite as frequently invade the surgical ranks. Did not Dr. C. H. Mayo affirm that of upwards of 55,000 medical licensees active in the surgical field in the United States, not over 10,000 have a just claim on public confidence in surgery?

Labor wants its injured to have skilful medical care. Labor objects to having injured workmen exploited in treatment that arrogates technical knowledge and is farcical in performance. This is wholly sustained by the letter and spirit of the compensation law and it is doubtful if anyone will be found to raise his voice in even captious remonstrance to it. The contention, however, is apparently one of practice rather than principle. There is an imputation, if not an arraignment, of individuals or interests operating in the compensation field that amounts to a challenge of good faith. If the implication is founded it is a perversion of the guarantees.

Widespread in New York, Ohio, and Michigan at least is the egregious vacuity that "baking and massage" is physiotherapy. Chiropractors, medical masseurs, and the insouciant Philistines of medicine peddle their affectation of knowledge and drive a thriving trade. Valuable in their place as both of these types of treatment may be, their exploitation for revenue only throws discredit upon sincere effort. Some pretentious equipments have been installed, not fortified by the necessary experience to guide treatment or discriminate between redeemable and hopeless cases. The inevitable disappointment to patient, employer, and insurance carrier will surely wreck the confidence to be reposed in physical modalities in precise hands.

No word has been more severely distorted than that of massage. No therapeutic measure has been more perverted in speech or in practice. From the skilled manipulation of tissues, guided by a knowledge of anatomy, an appreciation of physiology and a grasp of pathological change, the concept of massage descends through infinite depths to the wares of the barber shop and the resounding slapping of the Turkish-bath masseur. Innocuous as these chastisements are, to call them massage but confuses the mind of the casual observer as to the therapeutic value and use of scientific manual manipulation of tissues.

I have no intention—and less desire—to sneer at the man of high purpose in thus indicating the confusion in the differentiation of the lion's mane from the ass's skin. Sophistication and presumption are, however, real dangers in the life and progress of this branch of medical science that is potential for so much betterment and much solid value in industrial economy.

By its action in creating its Council on Physical Therapy, the American Medical Association has taken official cognizance of this branch of treatment as a specific entity to be distinguished in practice, and, undoubtedly, in education through the curriculum, from medical and surgical therapeutics. The American College of Surgeons in its 1926 yearbook said:

"Physiotherapy in recent years has become more and more recognized as a valuable adjunct in treatment. The scope of its therapeutic application is rapidly broadening. All standardized hospitals should develop this work to the full extent of their needs.

"Physiotherapy can be readily started on a small scale and gradually developed to a fully organized and equipped department under the competent direction of a medical physiotherapeutist and carry on the following branches of treatment: (a) Massage; (b) hydrotherapy; (c) electrotherapy; (d) heliotherapy; (e) mechanotherapy. This department will add greatly to clinical efficiency of the hospital in the prevention of permanent disabilities or chronic invalidism, the rehabilitation of the physically handicapped, the hastening of convalescence and the shortening of the days' stay of the patient in the hospital when properly carried on."

Place and Scope of Physical Therapy

The Committee on Traumatic Surgery appointed by the American College of Surgeons, made a number of recommendations as a result of researches in this field.

Certain of these have a direct bearing upon the conduct of physical therapy in hospital administration. One of the interrogations in the questionary of the Committee was "Value or lack of value of physical therapy; should it not be confined to definite groups of cases; when should benefits begin to show, and how long are we justified in continuing this type of treatment in the various groups?"

The digest of replies is quoted from the Committee report: "In a large majority of cases, physical therapy as now rendered is of little value. If the insurance carrier were placed in the position either of accepting the general use of physical therapy as now given or eliminating it entirely, it seems to be the opinion that the carrier, the employer, and the employee would all be better off without any physical therapy. If, on the other hand, this type of treatment can be applied only to the carefully selected cases (which group would be comparatively small), and then given only for a reasonable length of time early in the case, it is believed that such application would give benefit. By reason of the commercialization of this type of treatment and the activity of the various instrument makers who produce and sell this type of apparatus, it would seem that a very careful study of this whole problem of physical-therapy application is justified. One of the many objections is that the treatment of the injured becomes a mechanical treatment; the personality of the attending surgeon is lost; the patient himself fails to cooperate in the endeavor to restore function; he simply becomes a "repeater" from day to day and week to week for the purpose of receiving a type of treatment that is agreeable to him and gives him a certain amount of comfort temporarily as it is rendered; and eventually he becomes a psychological patient as well as an anatomical one."

Illustrate economic value to injured, employer, and carrier by balance sheets on E. B. B.; S. D.; A. O.

E. B. B. was admitted to the Clinic on March 26, 1923. This man was found in the hospital within three weeks after a dislocation of the elbow with a six-inch displacement, according to the surgeon. Elbow had been properly reduced and the bones were in relation, but there was a complete loss of muscular use from injury under the distribution of the musculo-spiral, and there was very marked limited motion of the elbow, with great pain. It was an acute case.

Percentage loss computed at that time was 85% of a hand from musculo-spiral paralysis; 50% of an arm over and above a hand from damage to the elbow joint. A hand is calculated up to, but not including the elbow joint.

Discharged—May 19, 1923.

Condition on discharge: All motions voluntary in the hand. Action somewhat weak but nerves will return to normal strength on use.

An award was made on September 26, 1923, on the basis of 25% loss of use of an arm. This loss under the award was to compensate for the restriction in motion at the elbow joint from the damage caused to the joint surfaces.

Incidental cost of treatment was $110.26. There was a saving on incurred loss of 85% of a hand and 50% of an arm, as estimated, less 25% of an arm, or a total of 163.4 weeks, making a net saving of $3,157.74.

A. O. Original Injury and date—Severely bruised heel, strained hip and laceration of head and ear. August 28, 1925.
Date Admitted—May 14, 1926.
Condition on Admission—Recent discharge from hospital after skin grafting. Four discharging sinuses. Marked eversion on crutches. Osteomyelitis of calcaneous and cuboid.
Percentage Loss or Estimated disability period—Disability complete with 100% loss foot from active bone disease.
Date Discharged—November 17, 1926.
Condition on Discharge—40% permanent loss of use (estimated).
Award: Date.
Basis—Not Closed.
Compensation Rate 19.23.
Incidental Cost of Treatment—$830.73.
Saving on Incurred Loss—
60% of foot (123 weeks) @ $19.23.....$2 365.29
Less cost treatment..... 830.73
Credit Balance (estimated).....$1,534.56

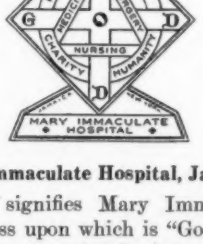
S. D. Original Injury and date—Fracture neck, both femurs. August 4, 1923.
Date Admitted—July 11, 1924. Readmitted August 24, 1925.
Condition on Admission—Impacted fracture, right femur, united; impacted fracture left femoral neck with fibrous union. Unable from pain, muscle spasm, and insecurity, to walk more than 100 feet, even with crutches.
Percentage Loss or Estimated disability period—Total disability with nonunion after eleven months.
Date Discharged—April 11, 1925. Second discharge December 23, 1925.
Condition on Discharge—Walks without aid. Sits, rises, bends reasonably well. Limited range of excursion at hips except forward and back. Able to deliver articles, drive light truck, and such tasks.
Award: Date—July 13, 1926.
Basis: Compromise settlement of $9.00 per week for 165 weeks, aggregate cost, $3,013.71.
Compensation Rate—$12.00.
Incidental Cost of Treatment—$880.44.
Saving on Incurred Loss—
Total Disability maximum of $5,000 reduced by.....$1,986.29
Less Cost treatment..... 880.44
Credit Balance.....$1,105.85

Operation of Physical Therapy in Industrial Relations

These savings represent, you will recall, but two thirds of the saving to the injured in addition to the moral reestablishment of confidence in his breadwinning power. Industrial practice is quasi-judicial. It entails obligations not prevalent in purely civil practice. It also has its compensations for the documentary burdens it imposes. In the first place, it must be borne in mind that under compensation laws, privileged communications, as such, do not exist between the doctor, hospital, and the patient. It, therefore, naturally follows that the employer and insurance carrier are entitled to all the facts and circumstances of treatment. This is as vital to the patient's interest as to the employers. To this end the patient's signed statement of the mode of the occurrence of the accident; to whom reported; names of witnesses (if any), and any other facts bearing upon it should form a part of the hospital record and be taken as early as his condition will permit; and this should be witnessed by the person taking and recording the same.

A great many complaints are received from hospitals because the employer or insurance carrier refuse to pay bills where it appears that the case is not a compensation case. Frequently the first knowledge the employer and insurance carrier have of an alleged accident is the receipt of the hospital bill. After the receipt of the hospital bill, an investigation is made and it is then found that the case is not a compensation case, and the hospital is so notified with a statement that the employer is not responsible for the bill.

To cure this evil—and it is an evil—the hospital can eliminate confusion by ascertaining at the outset from the patient, the facts surrounding the accident, and immediately securing from the employer authority for the patient's care and treatment in the hospital; and in the event the facts cannot be obtained from the patient, reporting to the employer the fact that they have in their care one of his workmen. Incidentally, the doctor might well follow the same practice. This will enable the employer immediately to authorize the care and treatment, thus protecting the hospital or to tell the hospital he knows nothing about the case, but will investigate and advise. This will protect the hospital and employer, and will save



Emblem of Mary Immaculate Hospital, Jamaica, L. I., N. Y.

This emblem signifies Mary Immaculate Hospital supporting the Cross upon which is "God" Whose Trinity is represented by the three-fold branch of hospital service: Medicine, Surgery, and Nursing, the Universality of which encircles the Cross as God does the world, giving Faith to Medicine, inspiring Hope in Surgery, and diffusing Charity to Humanity through Nursing, and all of which is embraced in the "Square" deal with "Diamond" service to the patient.

that ill feeling that arises after treatment upon refusal to pay the bill. For extraordinary care or treatment, such as a special room, special nurse, etc., written authority should be received from the employer or his insurance carrier.

Reverting to the hospital records, I have seen so many of them that contained only superficial data, and were of no value in court or before a referee, that I was not surprised recently to hear an able lawyer in open court say: "Hospital records; jottings of nurses; notations of interns; dotted with fly specks; no one responsible for them; and no one to say by whom the jottings, notations, or fly specks were made." The compensation law has placed an additional burden in the way of records upon hospitals and doctors, but along with this burden instead of the patient being a charity patient, he becomes a paying patient. Is it, then, asking too much to have complete and authentic records?

From the nature of the conditions physical therapy is called to treat, employers and carriers become restive lest treatment costs unjustifiably exceed improvement. Our clinic renders reports of progress every two weeks to keep those responsible thoroughly informed. Finally, it seems to me, that all clinical records of the hospital on compensation cases should be preserved at least six years.

The motive that stimulated the Aetna Life Insurance Company to establish its rehabilitation clinic three years ago cannot be better expressed than in the words of Dr. Orr at the National Conference on Rehabilitation at Washington, in 1924, when he said: "The impulse that chiefly brings me before you is that imparted by the considerable number of patients one sees who are delayed in obtaining or who do not obtain any degree of rehabilitation through the failure on their own part or through failure on the part of others (physicians and surgeons sometimes) to appreciate or realize what their possibilities of physical reconstruction are. . . . . Complete physical restoration after serious injury is rarely possible. Partial restoration, however, and restoration far beyond what is commonly obtained is possible."

The compensation law was created to ease the burden of misfortune from the injured man and distribute it to the consumer. The law does not shift all of the financial load. Compensation indemnities average two thirds the amount of wages with a prescribed maximum ranging from $12 to $25 a week. For his suffering and for his diminished income and for the possible permanent handicap of physical loss, the injured workman should receive every medical, surgical, and physical attention that will contribute to the highest percentage of reclamation.

Is physical therapy a therapeutic principle? Or is it a term to cover the exploitation of cases supposedly safeguarded by the compensation law? Insofar as the employment of physical modalities faithfully supplements good surgery, it has a claim upon the confidence of the injured workman, the employer, the insurance carrier, and the Industrial Commission. When it is intended to divert to medical costs what honestly belongs to permanent percentage loss, it becomes a canard and is stultified by its promulgators.

We have heard an officer of a state federation of labor cry out against types of medical attendance that do no credit to the profession. And every professional instinct stands squarely against the exploitation of the injured in industry for the benefit of anyone.

The compensation law was designed to meet the surgical and financial emergency created by accidental injury in the arts. Its purpose is not to be filched by carrier, by the medical profession, or by partisan ruling. Let medical science see this duty clearly. It is one thing to say that physical measures are indicated. It is quite another thing to say how and why the prescription is to be exhibited.

Unless a more definite concept of the methods calculated to produce certain results is portrayed by examiners at hearings, physical therapy, no matter by what vague terms it is called, is destined to carry distrust. Physical therapeusis is no more confined to "baking and massage" than materia medica is to salts and calomel. Perversion and grotesque claims bring but discredit.

Employers wish to avoid labor turnover and keep the artisans skilled in their work. Labor wants conservation of its personnel to the fullest that medical skill can effect. There are the true parties at interest under the law. Medical agencies serve industry best and the community best in the single purpose of conserving man power with all diligence and every regard for economy.

STUDENT NURSES, OUR LADY OF THE LAKE SANITARIUM, BATON ROUGE, LA.

Organization and Management of a Hydrotherapy Clinic[1]

Rebekah B. Wright, M.D.

Introduction

SINCE the word clinic, which originally meant instruction at the bedside, came later to include instruction upon ambulatory patients and now often designates the place where instruction is given, your speaker presumes to include in this paper descriptions of hydrotherapy suites, a brief discussion of some hydrotherapeutic procedures, and suggestions about prescriptions and records as well as the conduct of clinical instruction.

We are well over the threshold of the greatest revival of physical therapy that the medical world has ever known. During the past decade advances in electrotherapy have attracted much attention to that branch of the subject. Massage and other forms of mechanotherapy have been popular for three quarters of a century. In reading the history of medicine we learn that some form of manipulation has always accompanied hydrotherapy, the earliest of Nature's remedies. Today massage seems to link electrotherapy with hydrotherapy. One authority on physical therapy advises the application of diathermy to contracted muscles and stiffened ligaments previous to massage, another uses the whirlpool bath as a preparatory treatment.

Modern hydrotherapy received its greatest impetus from the research and teaching of Dr. Wilhelm W. Winternitz of the University of Vienna, who, between 1865 and 1898, published about fifty articles that placed it upon a firm scientific basis.

Two pupils of Winternitz, Dr. John H. Kellogg of Battle Creek, and the late Dr. Simon Baruch of New York, have advanced the knowledge of hydrotherapy in America. Both wrote excellent textbooks, delivered many lectures, and designed apparatus for the administration of douches and other hydrotherapeutic procedures. Hydrotherapeutic departments in many sanitariums and general hospitals are tributes to their educational efforts.

In 1893, Dr. Frederick Peterson of New York published an article, "Hydrotherapy in the Treatment of Nervous and Mental Diseasq," which stimulated the employment of water treatments in hospitals for mental diseases throughout the United States and Canada. He stated, "I do not know of any asylum in America that is supplied with anything beyond the ordinary baths for purposes of cleanliness." Now, from two to twenty continuous bath tubs are in daily use in almost every hospital for mental diseases in the country and many have busy tonic-bath departments.

A skilled hydrotherapeutist who is physically strong can give effectual treatments with water at cold, hot, or neutral temperatures, ice, simple receptables (as pails or dishpans), sheets, and towels. However, the march of progress has made available special metal and rubber utensils for use in making local applications and labor-saving apparatus with which local and general applications are made with precision. The essentials for a successful hydrotherapeutic department in a modern hospital are one or more suites of well-arranged rooms, good apparatus, suitable furniture, utensils and fabrics, a trained hydrotherapeutist with one or more assistants, scientific prescriptions, accurate records, and the cooperation of all of the nurses and physicians.

[1]Read at the Hospital Clinical Congress, Milwaukee, Wis., June 21, 1927. Dr. Wright is hydrotherapeutist to the Massachusetts Department of Mental Diseases.

Location

The hydrotherapeutic department of the general hospital and the tonic-bath suites of the psychopathic hospital should be located so as to obtain plenty of sunlight and good ventilation, paramount aids to reaction. A large space on the first floor is desirable. If this ideal location is not possible on account of insufficient water pressure, scarcity of space, or the weight of the fixtures, a well-lighted and ventilated basement may be used. The other physical-therapy departments should, for obvious reasons, be located in adjacent rooms.

The Construction and Equipment of Hydriatric Suites

Walls. To prevent dampness, foundation walls should be furred out with terra cotta so as to leave an air space of 2 or 3 inches between the furring and the wall. The best wall finish is a hard plaster made of Portland cement and Keen's cement. When properly applied, it gives a dense, hard, gray finish. Painting the walls with two coats of water-proof paint following sizing must be deferred until the walls are thoroughly dry, perhaps a year. It is difficult to erect tile or marble walls or dados in a manner to resist moisture. Terrazzo dados, made flush with the hard plaster walls, are practical.

Heat, Light, and Ventilation. The suite should be supplied with enough direct radiation to maintain a temperature of 72° to 80° F. in zero weather. The radiation should be divided into units so that degrees of modulation can be obtained.

There should be an abundance of indirect electric lighting for use on dark days. High windows are desirable, except for the restroom. Window transoms, when hung at the bottom to swing inward, admit air without precipitating it upon the heads of the persons below. In psychopathic hospitals the windows should be strongly and carefully screened to prevent the possible escape or injury of disturbed patients.

Ventilation by mechanical means is not generally necessary, but a suction is very desirable in order to exhaust impure air from drying closets and toilet, hydriatric, and shampoo-vapor rooms.

Doors. Smooth, flush, metal or hardwood doors are used.

Floors. The best possible material for floors is terrazzo. Correct and adequate drainage is an important feature of the floor area in the hydriatric room where the douches are administered. Thus far no construction has been as satisfactory as a deep terrazzo basin pitched toward a large central floor drain (with 4-inch outlet) covered with a well-made hardwood grating. This slat floor is supported upon angle and T-shaped steel girders which must be painted two or three times annually. It should be made in sections about 30 inches by 48 inches, a size easily removable for weekly cleaning and airing. The slats and buttons should be painted gray before they are joined in sections by ¼-inch iron rods. If the slats are 3 inches wide with ½-inch spaces between them, this portion of the floor of the suite feels very comfortable to the feet of the bather.

Floor Plans. Plan 1 suggests a complete hydrotherapeutic department for a general hospital. Patients having whirlpool or Nauheim baths would probably have no occasion to go forward in the suite so the booths for those treatments are located near the entrance of the suite. The passive and resistive exercises by which those

baths are followed are administered in the communicating massage booths.

Electric-light baths, vapor baths, shampoos, salt glows, and frequently fomentations and sitz baths are followed immediately by needle sprays and sometimes rain douches; therefore, the enclosed spaces for these preparatory treatments are located near the stall in which the stationary douches are placed.

The control table, in which water is mixed at a prescribed pressure and temperature for the needle spray, rain douche, perineal douche, sitz bath, fan, jet, and Scotch douches is installed eleven and one-half feet in front of the posterior wall of the shower stall. The satisfactory operation of the control table depends upon independent hot and cold water supplies to it. If it is supplied with lines furnishing water to other fixtures it will be impossible to obtain and maintain the required pressure and temperature for the needle spray and rain, fan, jet, and Scotch douches.

The thermostatic mixers for the whirlpool, Nauheim, and hydroelectric baths, salt-glow room and shampoo room are supplied with hot-water and cold-water lines that are independent of those to the control table.

The irrigation room, with walls to the ceiling, is an important feature of the suite. In it are located a pack sink, a metal wall cabinet, and an irrigation couch. The irrigation couch must be very carefully constructed in order that it may be kept clean and odorless. A vitreous-china syphon-jet water closet forms the center of the couch. It has a flat, rectangular, upper surface 12 by 29 inches. It has an adequate flushing supply and vent to the wall. Sections of polished marble 29 by 33 inches and 1¼ inches in thickness, are closely joined to each side of the highly glazed seat making the continuous top surface of the couch 29 inches wide and 78 inches long. The water closet is firmly installed. The marble sections are supported upon a strong, nickel-plated brass frame and a nickel-plated brass steam pipe is placed 12 inches beneath the couch to provide the necessary warmth.

HYDROTHERAPEUTIC DEPARTMENT FOR GENERAL HOSPITAL

Hydriatric Room

Control Table	Perineal
Sitz Bath	Floor Drain

Needle Spray and Rain Douche
Linen-warming Cabinet

Electric-Light Bath Booth

Electric-Light Bath Cabinet

Salt-Glow Bath Booth

Mixer with Hose and Spray

Whirlpool Bath Booth

Whirlpool Arm Bath	Whirlpool Leg Bath

Massage Booth

Small Lavatory	Massage Table

Shampoo-Vapor Room

Mixer, Hose, and Spray	Shampoo Table

Fomentation Booth

High Bed	Fomentation Sink

Hydroelectric Bath Booth

Hydroelectric Bath	Wall Plate

Nauheim Bath Booth

Nauheim Bath	Carbonic Acid

Supply Room

Water Closet	Lavatory

Linen Warming Cabinet

Irrigation Room

Pack Sink	Wall Cabinet

Irrigation Couch

Restroom

Toilet	Lavatory
Rattan Couches	Drinking Fountain
Chairs	Tables
Nurse's Desk	Bookcase

PLAN I

The Swedish shampoo is a valuable preparatory treatment that, to be effectual, must be given in a very warm room upon a marble or porcelain table. A practical shampoo room which is also a vapor room is mentioned in Plan 1. The vapor room, constructed and equipped as shown is superior to the vapor cabinet in that the bather can recline while being treated and can receive the shampoo when it is prescribed, immediately after having the vapor bath. The room has a smooth terrazzo floor basin draining into the one in the adjacent room and covered by gray board grating. In order to confine the vapor to the smallest space practicable, the ceiling is lowered to 6½ feet above the wood-grating floor. The walls and ceiling should be of concrete, smoothly finished with white or light gray water-proof paint.

The room should have sufficient steam radiation to maintain a constant high temperature, 90° to 100° F. when desired.

One end of the polished marble shampoo table is placed directly against and on a level with a small open window 14 inches wide and 15 inches high made oval above. In order to make the window opening quite comfortable for the patient's neck, it is desirable to cut this semi-oval window in a panel of polished marble that is 30 inches wide, 20 inches high, and 1¼ inches in thickness. A marble shelf, level with the table and the bottom of the window supports the head of the bather which projects through the window into the hydriatric room. The patient breathes the air of the adjacent room and cephalic cold is conscientiously applied during the treatment. A curtain of thick Terry cloth prevents the vapor from reaching the bather's face. The table is set one inch from the wall with its front one-half inch higher than its wall border. It is kept warm by a steam pipe coil suspended on brackets ten to twelve inches beneath it. A ½-inch pipe on the same level, carrying live steam, ends under the center of the table. The handles of the valves controlling the steam supplies are located under the shelf on the outside of the semi-oval window.

The nurse applying cephalic cold controls the temperature of the room and the amount of vapor in the room while the bather's body is exposed to the vapor, and does not enter the room until ready to administer the shampoo, or, if the shampoo is omitted, to assist the bather to the needle spray.

The water for the shampoo is obtained at the correct temperature, 98° to 102° F. through a hose from a thermostatic mixing valve on the wall. The room is well lighted by a large, high window. The swinging metal door has a large plate-glass inspection panel. Immediately after the fan, jet, or Scotch douche with which the treatment is concluded, the bather is enveloped in a warm linen, Turkish, or cotton sheet. When this becomes moist it is quickly replaced by a second warm bath sheet and the patient is seated during the further details of thorough drying. The warm sheets are taken from a steam- or electric-heated linen-warming cabinet located near the drying area. On the plan it is shown near the control table recessed in the wall of the supply-toilet room. The pack and fomentation sinks should be of the best porcelain enameled iron with large outlets and have galvanized iron drain-boards of special design attached.

The fixtures to be supplied with low-pressure steam are the shampoo table, fomentation sink, irrigation couch, and linen-warming cabinet.

Very little furniture is required. A small white metal stand and a white chair is needed in each booth and in the shampoo-vapor room. A record table, three additional white chairs and three bath stools, six clothing trees, two wheel chairs, and a comfortable cart are needed.

A stool 18 inches square and 6 inches high is required in the electric-light bath booth.

The treatment utensils required in the suite outlined on Plan 1 are 6 foot-bath pails, capacity three or four gallons, 10 compress basins, 3 inches deep and 9 inches in diameter, 6 pitchers, capacity one pint, and a large irrigation can (all of strong agate ware), 6 drinking glasses, 6 good mercury bath thermometers, a number of enema and colon tubes, 4 pneumatic rings, 3 ice caps, 6 ice collars, and 6 rubber hot-water bottles.

The estimate of the required number of bath sheets, Turkish towels, compress towels, gauze sponges, fomentation cloths, loofah bath mitts, ice-cap covers, ice-collar covers, hot-water bottle covers, bathing caps, and Turkish bath slippers would be based on the probable number of daily treatments.

Plan 2 gives a list of fixtures and furniture for the tonic-bath suite of a state hospital or a private sanitarium for mental diseases.

In the large restroom from 12 to 25 patients can wait previous to and rest after their treatments. The time passes pleasantly when spent in light handwork or simple games. The windows should admit unlimited sunlight and afford a pleasant view. A large number of booths are arranged in the dressing room and the lavatories and mirrors are so located as to separate patients who are using them. The windows are purposely high.

The packroom is located, constructed, and arranged to secure the utmost quiet for patients who need wet-sheet packs for mild sedation, as preparatory treatments, for insomnia, or for the tonic effect of reaction to cold. It communicates directly with the hydriatric room so that patients may pass quickly from the envelopment of the pack to the warm needle spray. It is desirable to have one individual packroom, as shown, in which to isolate a timid or disturbed patient in the pack.

The shampoo-vapor room is mentioned in Plan 1. If, for any reason, it is desired to make this superheated room a shampoo room only and to install a polished-marble vapor cabinet in the hydriatric room, the cabinet should be located directly over the drainage basin and partly surrounded by wood grating floor, as shown on the plan.

It sometimes happens that patients are constipated or are distressed by gas in the bowels and do not mention it until they are disrobed for treatment. The hydrotherapeutist understands that a pack, fomentation, or hot cabinet bath will do more harm than good to a patient in this condition. If there is an irrigation room in the suite, she can, after telephoning the physician for instructions, give the patient an enema. This usually relieves the patient, enables the hydrotherapeutist to give the prescribed treatment after a suitable interval, and saves the time of both the ward nurse and the hydrotherapeutist. A number of conveniently placed toilet rooms are shown on the plan. The nurses' dressing room provides a safe, clean place for the uniforms and wraps of the nurses while they, appropriately garbed, are administering the treatments. In the utility room the slop sink provides a place for obtaining and disposing of the water used in cleaning the suite. The closet provides ample space for cleaning materials. The drying closet, for fabrics used in cleaning, is a useful feature.

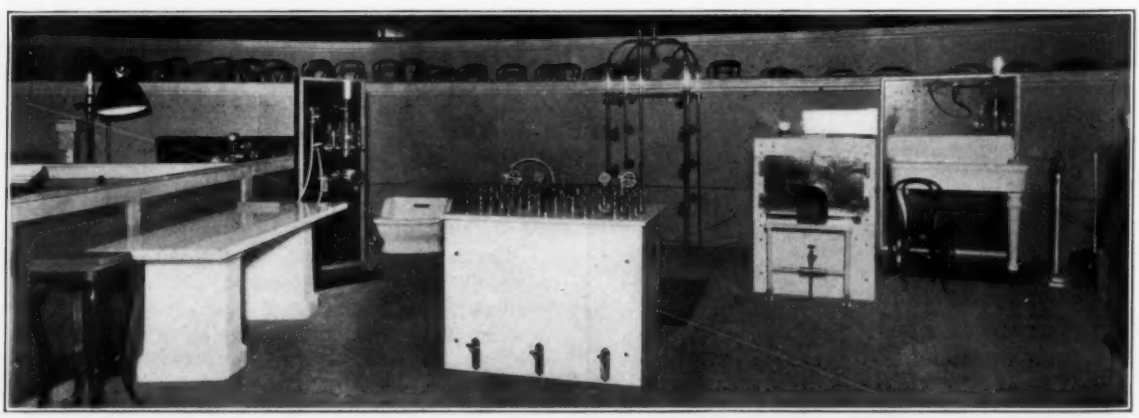
Plan 3 shows a list of rooms and equipment for a sedation suite in a hospital for mental diseases. The suite should have from three to twelve single packrooms, one or two continuous-bath rooms, the same number of small rooms that there are continuous-bath rooms, a utility room, and a blanket-drying closet.

The value of the sedation suite can hardly be overestimated. The temporary transfer of patients from the wards to the sedation suite not only provides for their scientific treatment but reduces the noise and the number of accidents in the wards.

Since the wet-sheet pack, prescribed for suitable cases, and properly applied, is a most valuable sedative treatment, every effort should be made to have the same conditions that are required by any one courting sleep —namely, quiet, isolation, and subdued light. Individual packrooms are, therefore, highly desirable. After patients are enveloped one nurse observes them in the packs, keeps accurate records, and summons other nurses to assist in removing each one after the patient has had sufficient rest in the pack. The observations are made through an inspection panel in each door unless there is reason for closely observing the color of the face, for feeling the temporal pulse or for giving the patient a drink.

The single packrooms may be seven by eleven feet in size or larger. Each room is furnished with one pack bed supplied with a mattress protected by a box-shaped rubber-sheeting cover (making the mattress reversible), a small stand, a chair, and hooks for clothing.

Sheets for the packs are wrung from a packsink installed in an alcove of the corridor where the blanket-drying closet is also located. A chair and record table are placed in the corridor for the use of the nurse who specials the patients in the packs. The shower bath in the utility room is convenient for cleansing patients who have soiled themselves in the pack. Selected patients may be refreshed and further soothed by brief rain douches of neutral temperature given after the packs. Patients who need enemas recline upon the irrigation couch in the utility room during treatment. Ice for ice



SOME OF THE HYDROTHERAPY APPARATUS EXHIBITED AT THE HOSPITAL CLINICAL CONGRESS, MILWAUKEE, WIS., JUNE, 1927.

caps and collars and for compress basins is kept in the small icebox shown in the utility room. The blanket-drying closet is used for warming sheets with which patients are dried after the packs and for drying blankets which have become damp but not soiled and were not in contact with the skin when patients were enveloped. This convenience saves many steps for the nurses whose energy should be conserved for the effort required in enveloping disturbed patients.

Every large hospital for mental patients should have three separate installations of continuous baths for each sex. Continuous-bath rooms should never be located in basements. They should be in or adjacent to the wards which they serve in order that active and excited patients may be brought quickly from their rooms to the baths, with the least possible exposure of those who are denuditive.

Three tubs located in one room is the ideal installation, as one nurse can usually give the proper care to three patients while they are in the baths. The continuous-bath tubs must be large and of special construction in order that patients may be properly supported and covered, the incoming water quickly distributed, soiled water quickly disposed of, and any one tub quickly emptied in case of emergency. The one frequently selected is of heavy cast iron, porcelain enameled inside and aluminum painted outside. It has a depth of about 20 inches at the outlet. On the outside are bosses fitted with nickel-plated brass buttons for the attachment of hammock and cover. It is supported upon legs which have brass flanges fastened to the floor. On the inside of the tub, about five inches above the bottom, are two or three small bells upon each side through which the bath water enters the tub. It is fitted with an extra-heavy nickel-plated brass waste and overflow. Upon the 3-inch outlet pipe, just before its union with the 3-inch overflow pipe, is a quick-opening gate valve with lever handle. The heads of the tubs should be from 12 to 30 inches from the wall. There should be at least 24 inches between the waste at the foot of each tub and the wall.

A large amount of water is required for the satisfactory operation of a group of three or more continuous baths. It is necessary to bring a separate 3-inch-pipe connection directly from the main supplying the institution to a room under or near the tubroom. A 2-inch line is taken off from the 3-inch line and from it, ½-inch supplies are taken off for each tub. Another 2-inch line is run to the hot-water generator. A thermostatic regulator of ample size must be placed in the hot-water line between the generator and the tubs. It must be set so that a sufficient supply of hot water, at the lowest degree practicable for mixing at 96° F. will be carried to the supplies for the tubs. It may be between 102° and 112° F. The water for the baths may finally enter the inlet pipe to the tubs through combination supplies on the wall or thermostatic mixing valves. These are intended as safeguards against scalding and yet we must remember that the very best automatic mechanical device will wear out and break down sometime. Our final reliance must be upon the competent, conscientious nurse.

SEDATION ROOM

Continuous Flowing-Bath Room

Toilet (Water Closet)	Shower
Icebox	Medicine Cabinet
Sheet Warmer	Record Desk
Pack Sink	Compress Stand

Continuous Flowing Baths

Utility Room

Toilet (Water Closet)	Shower
Icebox	Irrigation Couch
Linen Cabinet	Slop Sink

Drying Room

Blanket Dryer	Pack Sink

Blanket and Linen Cabinets

Packrooms

Stand	Chair

Pack Bed

Corridor

Telephone Record Stand Drinking Fountain

PLAN III

TONIC-BATH SUITE

Hydriatric Room

Control Table supplying the following three fixtures:

Sitz Bath Needle Spray	Rain Douche Perineal
Vapor Bath Cabinet	Fomentation Sink
Floor Drains	Stands
2 High Beds	Toilet (Water Closet)
2 Immersion-Bath Tubs	Sheet Warmer

Electric-Light Bath Cabinet

Irrigation Room

Irrigation Couch	Pack Sink
Wall Cabinet	Floor Drain

Shampoo-Vapor Room

Floor Drain	Shampoo Table

Packroom

Compress Basins	Blanket Shelves
Pack Beds	Pack Sink
Blanket Drying Closet	Toilet (Water Closet)

Linen Table

Dressing Room

Dressing Booths	Mirrors and Shelves
Toilet (Water Closet)	2 Lavatories

Restroom

Toilet (Water Closet)	Lavatory
Tables	Rattan Couches
Drinking Fountain	Chairs
Bookcase	Nurses' Desk

Utility Room

Slop Sink	Shelves

Cabinets or Closets

Nurses' Room

Toilet (Water Closet)	Lavatory
Dressing Booths	Medicine Cabinet

Corridor

Scale	Telephone

PLAN II

Other fixtures needed in the continuous-bath room are a shower, a pack sink, a water closet, and a linen-warming cabinet. The terrazzo floor should be pitched slightly toward a large central floor drain.

The furniture required for a continuous-bath room includes a small icebox, a medicine cabinet, two chairs, a record table, as many one-panel screens as there are tubs, and stands for compress basins.

The drinking-water pitchers, individual drinking cups, feeding cups, and compress basins should be of extra agateware which does not chip as easily as white porcelain-enamel ware. A number of pure-gum-rubber spinal bags are needed to use as ice collars.

The number of compress towels, gauze face sponges, ice-collar covers, drying sheets, fitted hammocks, and fitted covers required will be based upon the probable number of daily treatments and the hospital's laundry facilities.

Adequate heat and ventilation must be provided for the sedation suite. To prevent the possible exposure of very disturbed unclothed patients, the windows are purposely high. They should be properly screened and have dark shades. The walls should be painted a neutral shade of gray, green, blue, or delicate mauve.

The Hydrotherapeutic Department of the General Hospital

Like our most potent drugs, hydrotherapy is "a two-edged sword." Good results depend largely upon the intelligence, training, tact, kindness, firmness, and fidelity

of the nurses who administer the treatments. The technic of hydrotherapy is one of the specialties of nursing. The hydrotherapeutic department of the hospital should be in charge of a graduate nurse who is capable of filling hydriatric prescriptions, observing and reporting effects, and giving thorough training to her assistants. She must be highly gifted with the nursing sense; capable of securing the greatest possible degree of mental and physical comfort for her patients. She must understand the underlying principles of hydrotherapy as taught in "The Principles and Practice of Nursing" by Bertha Harmer, B. Sc., R. N., and "Hydrotherapy for Nurses" by George K. Abbott, M. D., and the larger works of Doctors John H. Kellogg and Simon Baruch.

It is desirable to have separate hydriatric suites for men and women. A male hydrotherapeutist who is a graduate nurse should have charge of the one for men. If the hospital has only one hydriatric suite it is sometimes difficult to arrange satisfactory treatment hours.

The patrons of the department may be patients sent by their physicians to reside at the hospital during courses of treatment, those who are convalescing after medical or surgical treatment, discharged patients who are advised to return daily or upon alternate days for hydrotherapy as a part of their aftercare and those referred from outpatient clinics. Irrigations, ice bags, cold compresses, wet-mitten frictions, fomentations, and other local applications of heat are frequently given to bed patients in rooms and wards. Those who are able to walk or ride in wheel chairs or upon the cart are treated in the hydriatric suite. Thus hydrotherapy permeates the whole hospital.

The following instruction upon "Opening the Department" from the manuscript of "Hydrotherapy in Hospitals for Mental Diseases" should be helpful to the hydrotherapeutist of the general hospital.

"In opening a new department the warmth, ventilation, and cleanliness of the suite should receive your first attention. See that all radiators and registers are working properly, that locks, screens, and hinges of doors and windows are in good repair, that every wall and floor and every bit of glass, wood, or porcelain is clean. Examine every piece of furniture and special apparatus in the suite and have any necessary repairs made. Obtain the utensils needed in giving the treatments and for cleaning the suite. Estimate the number of rubber sheets, blankets, pack sheets, drying sheets, Turkish bath towels, compress towels, bathrobes, slippers, bath mitts, and fomentation cloths that will be required in treating the number of patients that you will be able to care for daily. Requisition the same. The number of treatments which you can administer daily will depend upon the hours of treatment, the number of your assistants, the size and equipment of the suite, the proximity of the suite to the wards, and the cooperation of the ward nurses and attendants in getting patients to and from the treatment suites.

"The Water Supply. The volume and pressure of the hot and cold water differ somewhat in every hospital. Familiarize yourself with the water supply with which you must work before giving any treatments. Practice mixing water at the control table for needle sprays at 96° to 102° F. followed by fan douches at 90°, 86°, and 80° F. and follow these by jet douches at 72°, 70°, and 68° F. Take one or more needle sprays, fan, and jet douches to ascertain the pressure with which they may be given and at which they are comfortable through that particular control table. Time yourself. Ascertain if you can operate the rain douche and needle spray simultaneously. Ascertain the number of seconds between a needle spray and a fan douche at suitable temperatures and pressures and practice to shorten the period. Practice the Scotch douche, temperature 116° and 80° F., pressure 18 to 25 lbs. Familiarize yourself with the operation of the waste or drain valves, especially in regulating the pressure of the perineal douche and the temperature of the water for the sitz bath.

"Rehearsing Hydriatric Procedures. During the first week, practice the hydriatric procedures with which you are familiar, upon your assistant, upon nurses, and upon officers of the hospital who may volunteer. Have your assistant practice every treatment upon you. There is nothing that so reassures hesitant patients for whom hydrotherapy is prescribed as the statement that the operator has taken the treatment and knows how it feels."

In the hydrotherapeutic suite shown on Plan 1, four, and possibly six, nurses can administer treatments at the same time under the direction of the hydrotherapeutist. The hydrotherapeutist and her assistants can "speed up" the work only by moving quickly in preparing for each treatment. The old adage, "Haste makes waste" is as applicable here as anywhere. A sitz bath, a whirlpool, a Nauheim, and a hydroelectric bath, an irrigation, and a preparatory treatment (salt glow, fomentation, vapor bath, or electric-light bath) may be given at the same time without inconvenience. Two nurses must work together in giving the friction of drying. All must cooperate in supplementing whirlpool baths with massage, Nauheim baths with resistance exercises, and other treatments with the prescribed rubs.

Please permit me to discuss briefly the treatments available in the hydriatric suite of the general hospital.

Tonic Baths

A tonic bath consists of a preparatory treatment supplemented by a warm needle spray and immediately followed by a fan douche at a lower temperature. The circulatory and thermic reactions tone up the tissues and the feeling of well-being induced by the bath continues for several hours. The jet and Scotch douches are used to conclude the tonic bath when the patient's neurovascular training has advanced to the point where he can react to those vigorous applications. Tonic baths are given to patients who need improved nutrition, careful stimulation, or mild sedation. They improve the circulation of the blood, the tone of the muscles, and the elimination by the skin, lungs, kidneys, and bowels. Secondarily, they stimulate the appetite and digestion, relieve tension and insomnia, and heighten nutrition.

Preparatory Treatments

By preparatory treatment is meant any procedure that relaxes and warms the skin and brings blood into it preparatory to extracting heat by the administration of the fan douche at a lower temperature. General applications of heat can be pushed to the point of inducing copious perspiration. This is not always desirable for frail persons. All preparatory treatments should be cautiously prescribed and carefully administered in order to obtain the desired results and avoid exhausting the patients.

Douches[1]

"A douche is a projection of a jet or of many jets of water against the whole surface of the body. The volume, pressure, and temperature of the water are carefully prescribed. The friction due to the impingement upon the skin, of the water delivered with pressure, stimulates the circulatory reaction. The water for douches is mixed in the control table.

The Needle Spray (N. Spr.) or Circular Douche (C. D.)

"The needle spray is the application of water to the body through horizontal jets the size of a needle from 16 three-inch rose sprays so placed that the water is projected against the skin of the bather from four directions simultaneously. The large amount of water thus applied is a copious shower. The bather turns slowly in the

needle spray so that the water impinges upon all of the skin of the body except that of the face. If the water strikes the body with strong pressure, the feeling is that of many needles pricking the skin. *The warm needle spray supplements every preparatory treatment.*

"The whole body is laved with a large amount of water at a temperature of 96° to 100° F. during July and August, but at other seasons should be given at 100° to 102° F. If a patient goes directly into the needle spray from a saline bath raised to 100° F. or a hot sitz bath or from the vapor bath, it is desirable to have the temperature of the needle spray 104° F. for the first few seconds. *The needle spray is always instantly followed by a fan douche at a lower temperature.*

The Fan Douche (F. D.)

"The fan douche is a fan-shaped spray which the operator obtains by placing his index finger upon the stream of water as it emerges from the distal end of the douche hose upon the control table. When the needle spray ends the patient continues to stand in the same place, turning his back to the operator. The douche, given at a pressure of 20 to 30 pounds, is first directed against the patient's heels, lifted to strike his shoulders and carried down to the feet a number of times. Thus the cold water impinges upon small areas of skin in quick succession. After the second treatment the patient turns, presenting his back to the operator first, then one side, then the front of the body, then the other side and lastly the back again. This revolution of the body consumes about 30 seconds. All of the patient's reactive forces being concentrated upon repelling the invasion of cold in the areas approached by the cold water, a wave of reaction follows the wave of the douche. Were the douche of contrasting temperature administered through the needle spray, the large amount of cold water, laving every portion of the skin at once, would be a severe shock to a delicate person.

It is by the judicious use of the fan douche that we educate the patient's reaction to cold water delivered with pressure. The cultivation of each patient's reaction to cold requires the utmost care of the physician in prescribing and fine discrimination on the part of the nurse. Most delicate persons, especially those afflicted with mental diseases, have a fear of cold water and it sometimes requires two or three treatments to assure them that they are to experience no unpleasant sensations or consequences. In beginning it is customary to omit the douche for three or more days until the patient's confidence in the comfort of the treatment is established.

Patients who are unaccustomed to cold bathing will think a fan douche given at 90° cold. Some physicians advise reducing the temperature of the fan douche two degrees daily or every other day. Many persons cannot endure such a rapid reduction of temperature. It is, therefore, the author's custom to initiate the fan douche at 90° or 86° F. and to reduce it very gradually. We can sometimes reduce the temperature two degrees twice a week and the gradual reduction will not be noticed by the patient. When we reach 74° or 72° F., we sometimes find it impossible to go below that temperature for two or three weeks.

If the reaction to the fan douche is *good* and *fair* during half of the time and the thermic reaction is recorded as good and fair, the temperature of the F. D. may be reduced two degrees every week.

The Jet Douche (J. D.)

When the patient has had several weeks of hydrotherapy and is able to react to a fan douche at 74° or 72° F. and likes it, we introduce the solid stream or jet. This is never administered to the front of the body but is used on the back, up and down the spine, and up and down the limbs at a pressure of from 15 to 25 pounds for 10 seconds. It is at first administered at the same temperature as the fan douche, which always immediately precedes it, but can be dropped a few degrees a little later, thus: F. D. 70° F. 25 pounds, 20 seconds, J. D. 66° F. 25 pounds, 10 seconds. The jet douche may be added when a patient can endure the fan douche at 76° F.

The Scotch Douche (S. D.)

"The Scotch douche is the alternation of hot and cold jets of water against a local area of skin. Baruch employed this treatment frequently for habit, sciatic, and rheumatic scoliosis and for sciatica. He used the cold stream of water at 70° and the warm stream at 110° to 116° F. In treating scoliosis the douche is applied to the dorsal and lumbar spinal areas and in sciatica to the region of the sciatic nerve. We are aware that a number of physicians use the Scotch douche to the spinal area extensively for its general tonic effect. The temperatures used are 80° and 110° F. As it is an intensely stimulating treatment, the patients for whom it is prescribed must be most carefully selected. The pressure of the Scotch douche is from 15 to 20 pounds.

The Vapor Douche (V. D.)

"The vapor douche is a stream of vapor projected from the douche hose on the control table upon a circumscribed skin area. The treatment is most carefully administered in order to prevent scalding the patient's skin. It is given with or without intervening flannel cloths, as ordered.

"*Therapy.* Its use is indicated in rheumatism, neuritis, nephritis, hepatitis, lumbago, and sciatica. In treating sciatica the vapor stream and jet of cold water are sometimes alternated as are hot and cold water in the Scotch douche.

The Rain Douche (R. D.)

"The rain douche is the overhead shower. It is combined with the needle spray, at the same pressure and temperature, in rinsing the hair after the shampoo. The neutral rain douche, 92° to 97° F., is sometimes given for its refreshing effect after a patient's removal from a wet-sheet pack. The rain douche, gradually elevated from 96° to 104° F., relieves fatigue. It is followed by a dash of cold water."

The Electric-Light Bath (E. L. B.)

The electric-light bath is the exposure of the skin covering all of the body except the head to the influence of the rays from a large number of electric lights grouped upon the inside walls of a bath cabinet. The polished-marble cabinets are made upright or reclining. The lamps are in several groups controlled by the same number of switches, and if they are connected with a rheostat the operator can dim the lights without cutting out any of the groups.

It is desirable to have the patient enter the cabinet with its contained air at room temperature. With all of the lights on and a free circulation of air in the cabinet, the bather's skin will become warm, and even perspire slightly, while the air in the cabinet remains cooler than the bather's skin. If it is desired to make the treatment a combination of hot air and electric light, the neck opening of the lighted cabinet may be covered with a Turkish towel and the contained air may be allowed to reach a designated maximum temperature before the bather enters. One hundred and ten degrees F. is as high as can be comfortably borne in summer. In winter the average bather can endure a cabinet atmosphere of 120° to 130° F.

In the upright cabinet there is enough space in front of the revolving seat for a foot-bath tub. Sometimes a physician orders the simultaneous administration of the

foot-bath and the electric-light bath. Your speaker considers it safer and as effectual to precede the electric-light bath by the foot-bath.

Cephalic cold is applied during the 5- to 8-minute foot-bath in the form of a forehead compress, frequently renewed. This is continued and the ice collar applied after the patient is properly seated in the cabinet. If the patient perspires profusely it is desirable that he drink considerable hot or cold water in order to replace the fluid eliminated in the form of perspiration. The face is sponged with cold water frequently.

The prescription will read, "until good warmth," "until slight perspiration," or "until profuse perspiration." The skin's reaction to light and heat is observed through the plate glass inspection panel. If a bather expresses a wish to come out of the cabinet he is taken out instantly. A bather may be feeling very comfortable in the cabinet and suddenly become faint or have an attack of dyspnea. The temporal pulse is counted every three minutes. It quickens as the patient becomes warm and usually becomes slower when free perspiration begins.

In order to avoid chilling, the patient must pass quickly from the cabinet into the needle spray at 104° to 106° F. A mirror-lined canopy, well supplied with electric lights, and large enough to cover the whole body is convenient for giving electric-light baths to bed patients and may be used in the hydriatric suite for patients reclining upon the high bed in the fomentation booth. Smaller portable devices of similar construction may be used in applying electric light to the spinal area, trunk, joints, and other parts of the body.

Effects. "It caused the perspiration to occur in a remarkably short space of time thus avoiding the exposure of the body to the exhausting effect of prolonged heat."[2] Perspiration occurs sooner than in any other form of cabinet bath and occurs when the temperature of the air surrounding the patient in the cabinet is lower than 100° F. The body temperature, however, may rise several degrees in a prolonged electric-light bath.

The heat of the electric light is in the form of radiant energy which readily penetrates the skin and other living tissues. It does not interfere with, but encourages heat elimination by causing free perspiration. The cutaneous vessels are relaxed. The electric-light bath stimulates the elimination of carbon dioxide to a marked degree.

Therapy. The electric-light bath is used extensively in preparing the skin for cold-tonic procedures and is indicated in the treatment of dropsy, anemia, obesity, diabetes, syphilis, neuritis, neuralgia, rheumatism, and acute nephritis.

Contraindications. Electric-light baths are contraindicated in exophthalmic goiter, advanced nephritis, valvular heart lesions, and advanced arteriosclerosis.

The Vapor Bath (V. B.)

Whether the bather sits in the upright polished-marble vapor cabinet or reclines on the marble table in the shampoo-vapor room, the technic of the treatment is the same. It is preceded by a foot-bath, 104°-110° F. Cephalic cold in the form of an ice collar and forehead compresses is applied constantly. The bather's pulse is counted every three minutes and the respiration carefully observed. The bather is refreshed by frequent sips of cold water and is permitted to drink as much cold (or hot) water as he desires. The vapor is turned on slowly and regulated to suit the comfort of the patient. It may be turned on and off again two or three times during the same bath thus prolonging the patient's stay in the soothing, warm, moist atmosphere. This may be from 5 to 20 or even 30 minutes in duration. Some quickening of the pulse is to be expected. If it becomes unduly rapid or weak the patient must be taken out immediately. The nurse's attention must not be diverted from the patient for a single moment. If any unfavorable reaction causes the patient to request immediate removal the nurse must comply with the request instantly. The vapor bath may be followed immediately by a shampoo or by a needle-spray 102° and 104° F. as prescribed.

Effects. The vapor bath rapidly elevates the temperature of the skin and of the whole body because vapor is an excellent conductor of heat and during the exposure to the vapor, cooling of the body by the evaporation of sweat is suspended. The vapor softens the epidermis, facilitating the elimination of sebaceous material. The relaxation of all muscles is greater during and after exposure to vapor than during or after the application of heat to the body through any other medium. Consequently the heart quickly tires and the pulse quickens and may become weak and irregular. Respiration is more shallow, but quickened, during the bath. The vapor bath affords great relief from pain to patients suffering with neuritis, the various forms of rheumatism, and the pressure of exudates.

Therapy. The vapor bath is prescribed for patients suffering with sciatica, lumbago, or other forms of rheumatism, syphilis, paralysis, and for heating the skin previous to general cold applications.

Contraindications. It is not given to old or feeble persons, to advanced cases of cardiac or renal disease, or to persons with exophthalmic goiter.

Prescriptions. When prescribed as a preparatory treatment the vapor bath, on account of its pronounced relaxing effect, is not given more frequently than two or three times weekly. When given for the relief of pain the treatment may be administered upon two or three successive days if the prescribing physician finds that the patient is obtaining relief without any ill effects. The bath cannot be ordered for any definite duration. The prescription reads: V. B. while patient is comfortable.

Notations. The nurse should note the pulse rate before, 20 minutes after, and every three minutes during the bath, the number and duration of the exposures to the vapor and the intensity of the hyperemia of the skin at the end of the bath. It is customary to note that the skin is very warm and covered with moisture. It is impossible to say how much of this moisture is vapor and how much is perspiration. Patients often perspire quite freely after the bath. It is, therefore, desirable to have the bather rest between sheets and otherwise properly covered, for 20 or 30 minutes after the treatment and then note whether perspiration has been slight, moderate, or profuse.

The Fomentation (Fo.)

The fomentation is the application of moist heat by means of cloths. Four pieces of white woolen blanket flannel about 20 by 34 inches in size constitute a set of fomentation cloths. The fomentation sink in which the water for the fomentations is heated is supplied with a nickel-plated brass steam coil. The required temperature, 140° to 180° F., is thus easily obtained. The hot moist cloth is lifted from the water by means of a forcep, passed through the wringer, hastily shaken out, folded to the required size and placed within a dry cloth which has previously been folded in thirds so that either one or two thicknesses may be interposed between the hot moist cloth and the patient's skin. A portion of the dry cloth covers the application. As soon as the vapor penetrates the dry cloth and the patient feels the heat it may be necessary for the nurse to slip both hands under the application and hold it away from the skin for a few seconds. It is sometimes necessary to slip a soft cloth

under the application to absorb any vapor that may have formed drops upon the skin in order to prevent scalding. If the skin of the abdomen is stretched by distention or if the skin of a paralyzed part is numb, it should be well covered with vaseline before the fomentation is applied. The nurse should always have another hot moist cloth ready before removing the one in place. When the fomentations are used for the relief of pain the application should be removed every minute or so. Otherwise, three hot moist cloths, each remaining in place three minutes, constitute a treatment.

During the hot foot-bath preceding the use of fomentations as a preparatory treatment, apply cold compresses to the neck or forehead, changing them often enough to obtain the effect of constant cold. Continue this form of cephalic cold while applying the fomentation. A cold compress applied previous to each fomentation will usually suffice to keep the patient refreshed and prevent cerebral congestion.

Effects. The effects of the fomentation are those of a local vapor bath. A temporary paralysis of the vasomotor nerves of the skin area to which the application is made quickly follows the first stimulating effects of the heat. A passive dilation of the cutaneous vessels, shown by a dusky redness, ensues. This derivation relieves congestion in deeper parts supplied by the same arterial trunk. Pain caused by congestion is relieved. An apparently contrary fluxion effect can be obtained; that is, blood can be concentrated in an internal part if the size of the application is limited to the skin area that is in reflex relation with it. Fomentations also relax contracted muscles and expand white fibrous tissue. If a fomentation is applied to a considerable area, as the back or the abdomen, and the patient is well covered, it stimulates the excretion of perspiration over the surface of the whole body. It is thus a valuable preparatory treatment.

Therapy. Fomentations are used in the treatment of sprains, stiffened joints, sciatica, lumbago, intercostal neuralgia, gastritis, nephritis, enteritis, ovaritis, prostatitis, renal suppression, inflammation of the liver and congestion of the spleen. They are applied in quick succession for one or two hours to the hypogastrium in dysmenorrhea. The relief from the pain is almost magical.

In giving revulsive treatments, fomentations are alternated with cold compresses or sponging with ice or cold water. Hot and cold to the spine, liver, or spleen, with its preceding foot-bath and followed by a warm needle spray is an excellent preparatory treatment. When followed by carefully prescribed and correctly administered cold fan and jet douches, the combination constitutes a splendid tonic bath. A fomentation to the spine frequently precedes the application of the Neptune girdle or the wet-sheet pack.

The Salt Glow (S. Gl.)

Salt glow is the name given to a rub of the entire body with salt. It is followed by a more or less even and vivid pink glow. It may be given with the patient reclining upon a marble table but a more satisfactory treatment can be given with the patient sitting. The treatment is popular with patients because of the pleasant afterfeeling of stimulation which it gives and with physicians because it is beneficial to all who need the tonic effect of friction. The following two paragraphs show the system with which this form of friction must be applied.

"*Technic.* Place the sitz apron upon the patient. Exhaust the ice water from one of the compress towels and adjust it to the patient's forehead. Cover the stool with one of the small towels. Seat the patient with the enveloping sheet so adjusted that it can be removed easily. Place the feet in the foot-bath, making it as warm as the skin can bear it. Fold the other small towel and lay it over the rim of the front of the foot-bath tub.

"*Legs.* Lift the patient's right foot. Rest it upon the folded towel. Moisten the salt sufficiently to make it stick together but not enough to dissolve any of its granules. Starting just above the redness caused by the foot-bath, with both hands full of salt, palms meeting over the tibia, and fingers extending backward around the leg, apply the salt with circular friction, using considerable pressure. Permit the left hand to follow the right, thus keeping the area to which the friction is applied the same width as your hand. Four slow applications are more effective than eight or ten made rapidly. Rubbing too fast irritates the skin without pressing the blood out of it. With additional salt rub the area of skin just above, and thus continue to the knee. Always finish one area before beginning the next. Make more pressure upon the back than upon the front of the leg. Rub very lightly over the shin bones. Sometimes a pink glow will appear quickly. At other times the skin rubbed will appear pale and bloodless compared with the adjacent area, but if the rubbing has been given briskly, with pressure a glow will surely ensue and will often remain longer than one obtained quickly. Use rotary friction over the knee and replace the foot in the foot-bath. Continue above the knee to the flexure of the thigh with circular friction. Make considerable pressure upon the under side of the leg. Use rotary friction on the hip, sweeping the hand, full of salt, up to the crest of the ilium. Change the forehead compress, having the fresh one ready to apply before removing the one in place. Offer the patient a drink of cold water."[3]

After the skin of the entire body, except that of the face, has been rubbed thus systematically, the forehead compress and sitz apron are removed, a bathing cap adjusted to the head and the patient conducted into the needle spray with the advice to rub all of the salt from the armpits and the edges of the hair. The needle spray is given at 100° to 102° F. and 25 pounds pressure for two minutes and followed by a fan douche at 86° or lower, 20 pounds pressure for thirty seconds.

Effects. If the temperature of the damp salt is not lower than 92° F. a circulatory reaction without any appreciable thermic reaction is produced. The chemical irritation of the salt and the mechanical stimulation of the rubbing of the crystals upon the skin, the friction, cause the circulatory reaction. By moistening the salt with ice water a powerful thermic reaction may be obtained. Its derivative effect is shown by the redness of the skin. It stimulates the activity of the sebaceous glands. After treatment the skin feels smooth like satin. Its secondary tonic effect extends to the blood vessels and the structures contiguous to the skin. The salt glow is usually given as a preparatory treatment upon alternate days. Such vigorous friction would irritate the skin if given daily.

Therapy. It is indicated in the treatment of all frail persons who need gently stimulating tonic baths for the improvement of the circulation, elimination, and nutrition. It is of value in the treatment of anemia, nephritis, diabetes, and the convalescent stage of morphinism.

Contraindications. It is not useful in acute diseases and should be avoided in cases of eczema and other skin eruptions.

Notations. The nurse notes upon the record blank whether the reaction to the friction of the salt which is shown by the pink glow, is prompt or slow, even or uneven, poor, fair, or good.

The Shampoo (Sham.)

The shampoo is a thorough cleansing of the entire person with thick soap lather applied with friction and followed by an affusion with clear water.

It should be administered to all patients once each week. To the full-habited and those having oily skins it may be administered two or three times during each week. To the last-named its value is enhanced, if there are not contraindications to the general application of heat, if preceded by profuse perspiration.

The Swedish Shampoo is given with the patient reclining upon a marble table in a superheated room. If it is preceded by a sweating procedure a rub of the entire body with a one-per-cent salt solution is given before the lather is used. The Castile-soap lather, temperature 102° F., is applied by means of a loofah bath mitt with spiral and rotary friction. The rubbing should be vigorous and done quickly and every precaution taken to avoid chilling the patient. While the front of the body is being scrubbed the patient's legs are flexed at a comfortable angle and the feet rest in a vessel of warm water, 104° to 110° F. The foot-bath is removed, when the patient is turned upon the side for the purpose of shampooing the back and buttocks. As there is considerable danger of slipping when covered with lather, the nurse must assist the patient from the table to the warm needle spray.

The Tub Shampoo. Patients who need to be immersed in warm water for its solvent and analgesic effects, or to protect them from currents of air, are given tub shampoos.

The tub is filled with water, 94° to 100° F., in which a liberal quantity of Castile soap has been dissolved. The patient with a cold compress applied to the forehead and another to the neck reclines in the tub. Cold or warm water is added to suit the comfort of the patient. The bath mitt is wielded with spiral and rotary friction with sufficient vigor to make the skin glow. When the whole body has been systematically scrubbed and is well covered with lather, the patient is assisted out of the tub and into the needle spray.

In some hospitals it is customary to shampoo the hair at the time the body shampoo is given. The bathing cap is then omitted and the needle spray is supplemented by the rain douche at the same temperature and pressure.

Effects. The shampoo frees the body of exfoliating epithelium and odors clinging to hirsute areas. The millions of ducts opening upon the surface from the sweat and sebaceous glands are cleaned of accumulated material, sebum, and bacteria of decomposition. The friction dislodges the grease and dead epithelium. The friction of the loofah bath mitt causes a tonic reaction, which fills the dense capillary network of the skin with arterial blood. It stimulates the circulation of blood throughout the whole body, thus relieving congestion in internal organs. There is, of course, some atonic reaction to the heat in the tub shampoo. The warm water causes muscle and elastic fibers to relax. The deepened inspiration and quickened circulation of the blood through the lungs causes a liberal exchange of carbon dioxide for oxygen, which goes to repair all of the weak areas of the body. An immediate effect of the shampoo, followed by an ablution with clear water, is a feeling of well-being, the whole organism refreshed.

The Sitz Bath (S. B.)

The sitz bath is the immersion of the thighs, buttocks, and abdomen below the umbilicus in water at a prescribed temperature. It is given hot, warm, neutral, cool, cold with friction, or revulsive, according to the therapeutic indications. It is usually accompanied by a footbath. Sometimes it is preferable to immerse the parts named and the entire lower limbs in water of the same temperature, thus making the treatment a half-bath. It may then be administered in one of the large full-bath tubs installed in the department or in the patient's private bathtub.

The hot sitz bath may be begun at 96° or 98° F. and the temperature carefully elevated until it reaches 106° or higher. Patients who require them usually tolerate an elevation of the temperature two degrees every day or every other day until frequently a temperature just below scalding point is well borne. The duration is from 3 to 10 minutes.

"Physiological Effects. The general effects are those of the hot immersion bath. The cutaneous branches of the external iliac are widely dilated, diverting blood from the internal viscera. The hot foot-bath, by dilating the branches of the external iliac, still further drains the portal circulation. At temperatures above 110° F., especially if the bath is continued beyond 3 or 4 minutes, the effect is to excite the pelvic circulation, and to concentrate the blood in this portion of the body.

Therapeutic Applications. The hot sitz is of great service in restoring the menstrual function when suspended as the result of general chill or other cause. The shallow, very hot sitz is an excellent measure in relieving the pain of inflamed *hemorrhoids.* It is likewise of great value in vaginismus, spasm of the neck of the bladder, anal tenesmus, in uterine colic, in nephritic colic, in sciatica, lumbo-abdominal neuralgia, neuralgia of the ovaries, testicles, and bladder, and in all painful affections of a noninflammatory character, involving the viscera of the pelvis and lower abdomen. The hot sitz is a most powerful analgesic measure.[4]

References

1 and 3: From MMS., "Hydrotherapy in Hospitals for Mental Diseases."

2 and 4: John H. Kellogg, M.D., in "Rational Hydrotherapy."

(To be concluded.)

Report of the Rockefeller Foundation

The International Health Board of the Rockefeller Foundation has just published a preliminary report of its activities for the year 1926.

The board has given special attention to the epidemiology of hookworm disease. The report after mentioning the value of research work in this field says: "At the present time it is fair to say that hookworm disease has almost disappeared from the United States and is rapidly coming under control in many parts of the world. But the great achievement is not the social and economic rehabilitation of the more than six or seven million people who have been treated for the disease during the past ten or fifteen years; it is the development of administrative measures that will prevent millions yet unborn from ever suffering from its ravages."

In regard to malaria, the report says that a research has indicated that only one species of mosquito is responsible for malaria in the southern states and that this species has a limited seasonal distribution and preferential breeding places. Thus the cost of control is much reduced.

Laboratory studies also have shown that yellow fever may be universally controlled by centering attention upon key points or endemic foci.

During 1926 the board took part in public-health work in 38 states and countries throughout the world. It assisted governments in yellow fever, hookworm, malaria, and general health surveys; and in campaigns against diseases in general.

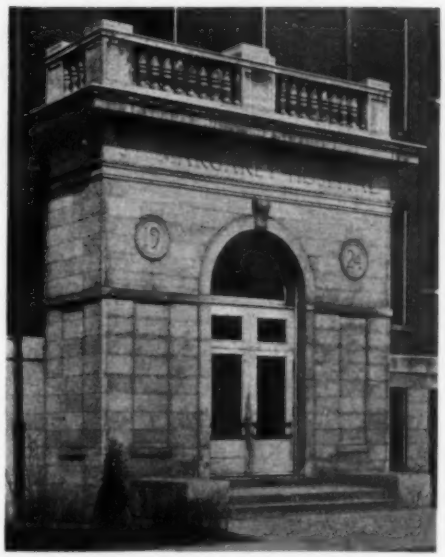
The board's aid to public-health work consisted of: Contributions to schools of hygiene; assistance to public-health teaching in medical and other schools; fellowships for prospective public-health workers; study trips for health officials; conferences, etc.; field-training stations; training public-health nurses. Much assistance has been given in organizing rural health organizations in various countries.

St. Margaret Hospital, Hammond, Indiana

Elmer W. Reading

ST. Margaret Hospital at Hammond, Ind., is a busy, well-organized institution of 300-bed capacity conducted by the Sisters of St. Francis Seraph of Perpetual Adoration whose mother house is located at Lafayette, Ind. Ven. Sister M. Fulgentia is the present superior. Four Sisters came to Hammond in 1898 and opened a 30-bed hospital in a remodeled residence building.

The first unit of the present hospital, a brick and stone structure, was dedicated in 1901. This unit now houses the nurses' home and school. Another wing was added in 1909 making room for 150 patients. The power plant and laundry building was also erected in 1909.



MAIN ENTRANCE, ST. MARGARET HOSPITAL, HAMMOND, IND.

Recent Additions

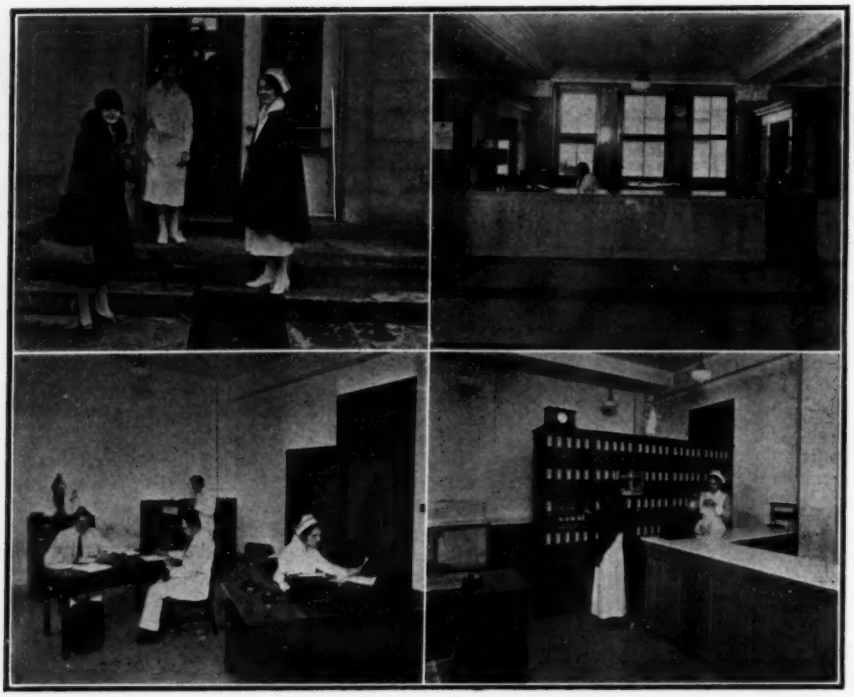
The latest addition, begun in 1923 and planned by D. X. Murphy and brother of Louisville, Ky., has increased the bed capacity to 300. This new building contains the main entrance, receiving room, surgical, pathological, obstetrical, and roentgenological rooms.

At present the hospital personnel consists of 65 attending physicians and surgeons, a resident doctor, seven interns, a dietitian, postgraduate supervisors for the maternity department, 50 student nurses, 30 registered nurses on call, a resident chaplain, Sister superior, and 30 Sisters.

One of the illustrations shows the exterior of the new building and another a close-up view of the main entrance. The base of this building to the level of the first floor, as well as the entire entrance, is finished in Bedford stone, the remainder in red brick, with stone window slabs. The sunrooms are at the east end of each floor. The structure proper of this building is of the solid, reinforced-concrete type.

Marble steps lead to the office on the first floor. The lobby has gray marble wainscoting and terrazzo floor. The office, and the telephone-operator's desk are located behind the counter as shown in the illustration. To the right of this is the historian's office. To the right of the historian's office is the pharmacy, where a Sister R. Ph. fills prescriptions for the patients. The pharmacy is provided with a swinging-compartment cabinet. These compartments are kept closed and have the appearance of an office filing system. No bottles or packages are exposed to view.

ST. MARGARET HOSPITAL, HAMMOND, IND.



ST. MARGARET HOSPITAL, HAMMOND, IND.
Main Entrance, Record Room, Office, Pharmacy.

Floor Arrangements

Also on the main floor of the south wing are the offices of the instructress of nurses and the dietitian and the graduate nurses' rooms. The main floor of the east wing contains the wards for male patients with dressing, linen, and workrooms.

The interns' quarters also are on the first floor. These are provided with a private inside corridor separated from the main corridor, forming a sort of "apartment" with private room for each intern, common lounging room, and common bathroom. However, since there are now more interns than these quarters provided for, some of them have been assigned nearby rooms intended for patients.

The chapel is located in a separate building with an entrance at the end of the main corridor on the first and second floors. The chaplain's rooms are located near the chapel entrance on the first floor.

The second floor is given over to private rooms and to wards of two or four beds with the necessary utility rooms, dressing rooms, etc.

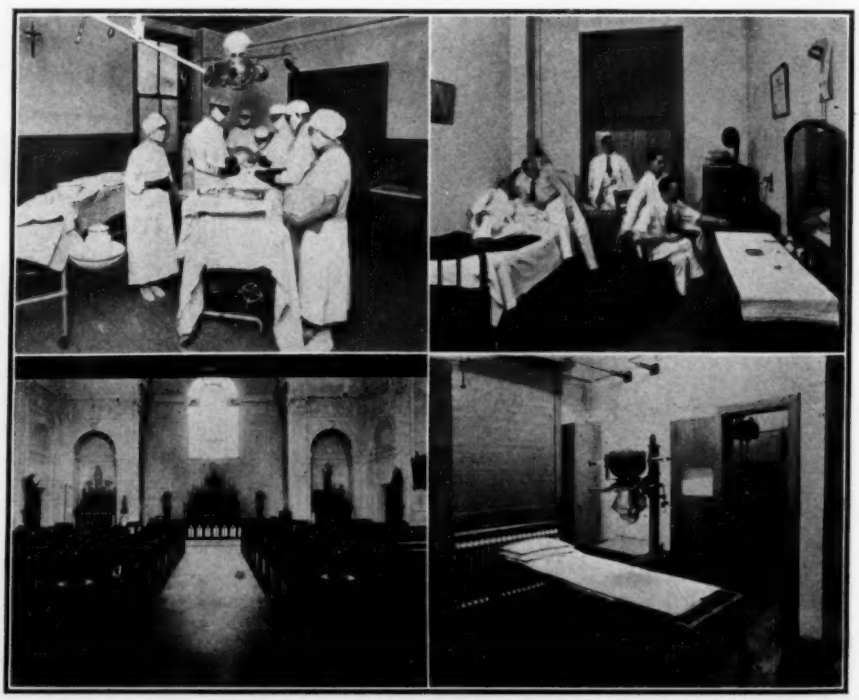
The third floor of the south or new wing is reserved for maternity patients. There are two delivery rooms equipped with steam sterilizers, doctors' and nurses' scrub-up rooms, waiting rooms, and nursery. The babies may be seen through a window between the hall and the nursery. Each baby wears an identification necklace. Adjoining the nursery is the nurses' duty room. The east wing on this floor is for general female patients, both surgical and medical.

A section of the fourth floor including the sunroom is reserved for children. About twenty children may be accommodated here, in charge of a special supervisor.

The clinical laboratory is also located on the fourth floor. Here all the necessary tests including tissue examinations, are made. A Sister technician gives full time to the work. She is assisted by a lay technician, a senior student nurse, and an intern.

Surgical and X-ray Departments

The surgeries on the fourth floor are well planned and equipped with modern furniture, apparatus, lights, etc. The floors are of terrazzo and the wainscoting of marble. The large enclosed sterilizers are located each between two operating rooms. On each side of the sterilizers are scrub-up sinks with elbow control for water, those on one side for surgeons, and those on the other for



ST MARGARET HOSPITAL, HAMMOND, IND.
Operating Room, Chapel, Interns' Room, X-Ray Room.

nurses. A separate room is provided for storing the surgeons' instruments. The room is long and narrow with the instrument cases arranged along the walls and a narrow table placed in the middle of the room.

The X-ray department is located on the ground floor, next to the emergency receiving and operating rooms. A Sister technician gives full time to this department, making pictures and giving treatments. She often has about twenty treatments to give in a day, in addition to making pictures for the doctors.

The emergency rooms are near a separate ambulance entrance and near the elevator. They are equipped with bath slab, operating table, sterilizer, scrub-up sinks, etc.

Kitchen Arrangements

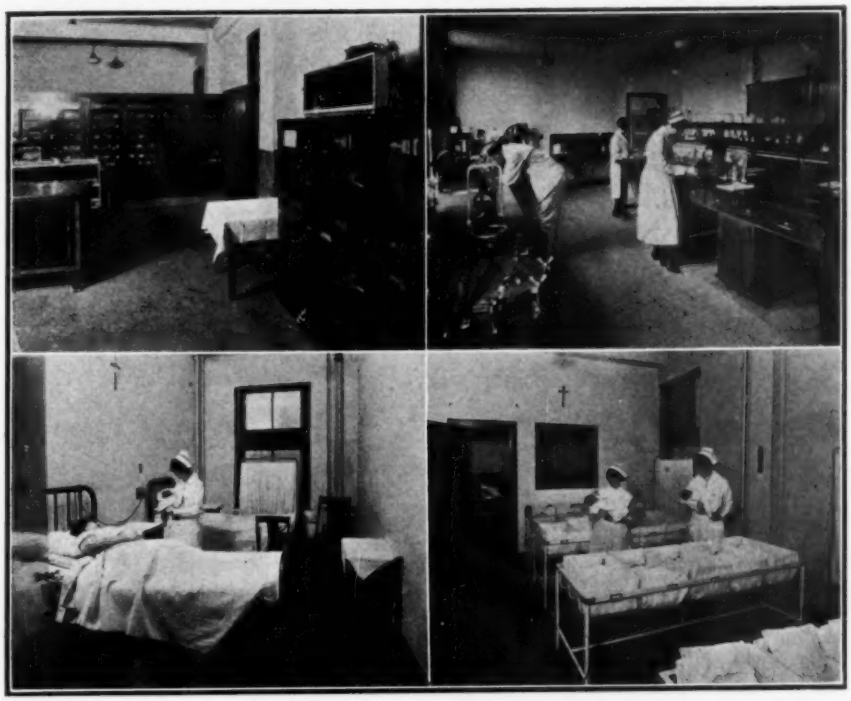
The large main kitchen on the ground floor is fully equipped with electrical appliances for preparing food. The food is carried in electrically heated carts by a special elevator to the serving kitchens on the various floors.

The students' dietetic laboratory at present joins the main kitchen. Here the dietitian has been supervising the preparation of patients' special diets in addition to instructing the student nurses in dietetics. The preparation of special diets has become such an important part of the hospital work that it has outgrown the present arrangement and a separate patients' diet kitchen is to be supplied soon.

The dining rooms for Sisters, nurses, chaplain, interns, and visitors are on the ground floor. The dishwashing for these rooms is done in a workroom conveniently located.

Hospital Library

The hospital possesses a well-selected library for the use of its personnel and patients. The library is catalogued according to the Dewey decimal system. The city library supplies an additional selection of books renewed periodically.



ST. MARGARET HOSPITAL, HAMMOND, IND.

Above:
Serving Kitchen,
Maternity Ward,
Laboratory,
Nursery.

Right:
Student Nurses' Room
Nurses' Recreation Room
Classroom

BIRD'S EYE VIEW OF ST. MARGARET HOSPITAL, HAMMOND, IND.

The School of Nursing

St. Margaret Hospital may justly be proud of its school of nursing. Sister M. Florina, R. N., directress of nurses, is in charge of the school. Miss Angelina R. Reinke, R. N., a graduate of St. Margaret Hospital, is instructress of nurses, and Miss Lillian Drugswald, B. S., is instructress in dietetics. There is a lecture staff of about twenty physicians and surgeons. Nine nurses were graduated in 1927. A tenth member of the class, Miss Cecelia Fralich of Tipton, Ind., died during the year.

At present about 40 students are enrolled in the school. There are accommodations for 70 in the original wing of the old hospital, which has been remodeled into a comfortable nurses' home with lecture hall and demonstration room besides a beautifully furnished recreation room. Some of the probationers and first-year students are quartered in small dormitories, but the majority of students have their own rooms which they arrange and decorate according to their taste.

The school was organized in 1919 with five students. Ven. Sister M. Adelberta was the first superintendent, and served in this capacity until 1923. Ven. Sister M. Humberta then held the position for one year, and was succeeded by the present superintendent, Ven. Sister M. Florina, under whom the school has made great progress in enrollment and in standardization of the curriculum. The St. Margaret School of Nursing was recognized by the state in 1921 as a standardized accredited school.

Specially trained supervisors are in charge of the various departments of the hospital. These, in addition to their main problem of the welfare of the patient, must see that the practical training of the student nurse is not neglected.

The Use of Rubber in the Hospital[1]

James H. Stedman

As a rubber manufacturer of thirty years' standing and as chairman of the rubber-flooring division of the Rubber Association of America, which is our national rubber association, I am glad to say just a few words and I will be very brief, I promise you.

I like to think of the hospital in the spirit of the French name as Hotel Dieu, the Hotel of God. I like to think of it in that way and I like to think of the pilgrimage which I made last year to the Hotel Dieu in Paris, where I asked them in my very faulty French where I could see the mother and the baby. They didn't understand my French and I don't think I quite understood it.

"L'enfant et mere?"

"Oui, oui, monsieur."

They took me in here and there until finally we found the maternity ward and where I saw probably thirty mothers and thirty babies and the babies were all in little beds each down at the foot of the bed where its mother lay. But I said, "When do the babies go away by themselves?" "To the nursery?"

"Ah, non monsieur." In other words, there they stayed as long as their mothers did.

I said, that must be just fine. That is the way it should be, because every mother should see her baby all of the twenty-four hours of every day. Of course, when they got to singing in chorus they should be divided into groups of tenors, altos, sopranos, and basses to have the ward atmosphere as musical as possible.

In the question of art, raised by the previous speaker, I want to say that I think we have the answer for it in rubber. In a hospital in Detroit, I know of a children's ward with animals in the floors. Not, of course, real savage animals, just rubber ones. There was one little boy there who was rather obstreperous. He was not such a nice boy that day and the kind Sister said, "Do you like the little dogs?" (meaning those in the floor).

"I like them," said he.

"If you are not a good boy, do you think the dogs are going to stay here or will they go somewhere else?" That was a thought for him; he preferred the rubber dogs to being bad.

When I was in London going through Westminster Abbey, I said to my guide, after she had expatiated for a long time on this wonderful tomb and that historic tablet: "Let's go somewhere where it is cheerful."

"Where shall we go?" she said.

"Isn't there a good hospital near here?" I asked.

"The Westminster Hospital right across the road."

"Let's go across and see that." We went over to the Westminster Hospital. In the children's ward I saw a beautiful frieze with animals of all sorts and so lifelike that they seemed actually in action for those children and I, too, really enjoyed them. Their eyes were open to that one thing more than to their own troubles.

We rubber manufacturers are trying to make a perfectly sanitary, beautiful, and fine thing in a decorative way in your floor, on your walls or wainscoting, giving you the beauty of marble with the added advantage to be had in rubber.

Where should rubber be used in the hospital? By all means in the corridors. It will give the quietness and the foot comfort and will help you keep your junior nurses from all kinds of foot troubles. By all means in the private rooms, by all means in the wards. In the children's wards, be sure to get some action in the designs.

We also have come to believe this, that rubber properly made is useful in your X-ray rooms, fluoroscopic, cystoscopic, and deep-therapy rooms, both for floor and wall treatment. If the rubber is properly compounded, you will get the same effect as you get from sheet lead. It has the advantage of smothering the noise of your machines, the advantage of a nonrigid, comfortable floor,

[1]Address at the Hospital Clinical Congress, Milwaukee, Wis., June 22, 1927. Mr. Stedman is president of the Stedman Products Company, South Braintree, Mass.

A RUBBER-TILE FLOOR IN THE CHILDREN'S WARD.

and we believe at lesser cost than the sheet-lead installation. This X-ray rubber treatment is something that is being done quite extensively and I recommend it to your careful and thoughtful attention.

There are certain questions in regard to the operating room and delivery room as to whether we get something in using rubber that we don't get in a hard tile. I know we do, but at the same time we have to consider that we can't get the floor quite as definitely clean as with hard tile. It will show some stains.

We have a hospital in mind in Boston where there are two operating rooms. The superintendent of the hospital was saying that the floors showed some stains. Their chief operator was there at the time, she was talking to me about it, and I said to him, "Dr. L., what is your reaction on this floor?"

"I would rather work on that than in there," meaning their main operating room, where the floor was a hard tile. "I get a degree of comfort and nonslipping."

"How about some of the stains that you see in the floor?"

"I am not so much worried about that as I am as to what happens to the patient on the table."

Where shouldn't rubber floors be used in a hospital? You shouldn't use rubber floors anywhere where the element of moisture is such as will keep the underfloor constantly wet or even moist. Such floors are ordinarily the ground-level or basement floors where the concrete once wet has no chance to dry downward, nor would it have a chance to dry upward if it were covered with rubber, and consequently the rubber would begin to buckle and great trouble ensue.

Also rubber should not be used in the general utility rooms, nor in general kitchens, although in diet kitchens it is quite all right. It should not be used near sterilizers or anywhere where there is a constant spillage of water, because the effect is the same on the tile if the moisture goes down into the concrete from above as though it comes from the concrete below.

Excessive moisture is so large a part of the rubber-floor problem that I am becoming very much of an advocate of dry-cleaning rubber floors. The less moisture we use the less possibility there is of trouble. Rubber floors being so very dense and nonporous, dirt does not get down into them but remains on the surface. I believe most hospital floors other than operating-room floors do not need to be washed oftener than once a week or once in two weeks, but between times they may be gone over with a dry mop or with a weighted push brush with carpet over the brush, or with one of the rotary electric machines with a cocoa brush on it. Many soaps and powders are extremely detrimental to rubber floors.

To me the hospital field is the most interesting field for rubber flooring. Our organizations do business with many other fields like the banks and department stores, churches, schools, etc., but to me, personally, the hospital field is by all odds the most absorbing field. I believe if you hospital people will think sometimes of your problems in terms of rubber and say to your rubber man in whom you have confidence, "Isn't there an answer to this particular problem in rubber?" I am inclined to think that you will get some help.

I just want to leave one little thought with you. I said at the outset that I like to think of the hospital in terms of the Hotel of God. Just this verse comes to my mind:

Hotel Dieu, to thee be given,
The best of earth, the grace of Heaven;
Devotion, sacrifice, and skill,
Balm of Gilead for each ill;
Reward thy servants in their time,
Their lives to shine with light divine.

The Application of Color to the Hospital[1]

M. Rea Paul, New York City

IT is indeed a very great pleasure to be here with you and have this opportunity to tell you something of the work that is being done today in the field of color. There is just one unfortunate thing about color and that is the amusing manner employed by writers when referring to it in news clippings and in books that are constantly coming out on the subject.

There was a book placed on my desk just a short time ago and I am going to read one of the paragraphs from it that amused me very much. My eye lighted on it right away. This book was published in London and is called "The Psychology and Tradition of Color." This is the paragraph to which I refer:

"Most uncivilized people love red and use it a great deal in dress and ornament. Indians, Mexicans, Negroes, and Americans show their partiality for red in dress, rugs, and tent decorations."

That is one of the things and only one for I couldn't begin to read the quantities of clippings that are being placed on my desk every day in regard to this subject of color. Unfortunately some people look at it in entirely the wrong light but I assure you that there has been a quantity of work done with practical results that are not all simply theory.

One of the first things in the study of color is to find out just exactly what has been done to date to throw out work which is questionable and to accept only work which is known to have been carried out along properly conducted scientific lines.

One of the very first things of interest, perhaps, is the classification of types of individuals. Individuals are divided into three types, the dichromate, the monochromate, and the trichromate. In other words, people who are partially blind to hue, the people totally blind to hue, and the people absolutely normal. From statistics we find that out of every one thousand individuals forty are dichromates, that is, if we were to have a large gathering here of 1,000 individuals there would be 40 who would be unable to distinguish common differences in color, such as the difference between red and green. The colors would look absolutely the same to them.

The next thing of interest was to determine whether it was practical to give people the actual colors that they liked. Let us take decoration problems or color treatments for hospital institutions—is it possible for a person's like or dislike for a color or colors to be the influencing factor in determining whether that should be the proper one to use? We have gathered some very interesting information on that subject. To illustrate the manner in which tests were conducted I have here eighteen colors, which have been mounted on a white ground. Colors similar to these were presented to first- and second-year college students for comparison and out of these eighteen colors it was possible, by comparison, to work out 152 combinations. The individual who was examining those students asked them to indicate instantaneously which of the two colors he or she preferred. There was an immediate record made of that and in any case where there happened to be any hesitation those two colors were temporarily set aside and the next two considered. As soon as the results had been recorded of the eighteen colors on white grounds, the same colors were then mounted in this manner on black grounds and were then presented to the students. By simply averaging the results it was easily possible to determine what the natural preference would probably be if they were presented on a neutral gray ground. As a result of this test 36,000 individual votes or determinations were obtained and it was found that there was a distinct preference for the strong colors in red and in orange. There was a preference as illustrated by this finely dotted line for the light tint of blue as against the deeper tints, in other words, this blue was preferred and in the case of red, this red was preferred. Now here is the interesting difference between men and womn. It was found that the women who were examined preferred red to a considerable extent over the men. In other words, the women preferred red 72.97 per cent as against the men 48.84 per cent. But in this next chart it will be found that both the ladies and the men seem to be in agreement, particularly on the deep shade of yellow. On green, we find the men preferred green considerably in excess of the ladies and with the final result of both sexes showing a marked preference for the total votes showed blue to be preferred by almost every one, red next, green next, violet, orange and yellow least of all.

Now perhaps of all of the colors which are utilized for decorative purposes in sidewalls, ceiling treatments, and so forth, yellow, and its derivatives, is used more than any other individual grouping of colors. Yet we find that blue is by far preferred by individuals in this particular voting. Consequently we are forced to conclude that we cannot allow individual preference to overcome our definite knowledge of what is the proper color to employ in the decoration or the treatment insofar as color goes of the sidewalls of any interior.

The next step was to consider the individuals themselves and what their reactions to the different colors happened to be. When one has studied and worked with color for any great length of time it seems absolutely impossible not to let the mind wander a little onto this very interesting subject of psychological reaction to color sensations. It is a point we have devoted a considerable amount of thought to, and a considerable amount of study. We have gathered everything possible for us to find that has been in print, both here and abroad, on the subject of psychology as applied to color. We have examined, we have made tests, we have arranged colors in front of students and have asked them to indicate a preference, to describe if they could, just how those colors impressed them, whether they were irritating, whether they were depressing, tranquilizing, and so forth, and it is absolutely impossible to conduct a test of that sort and expect to get satisfactory results. Those tests have all been failures. There is no real scientific foundation on which they could be conducted, consequently the results could not be accepted. In tests of this type the people do not always truthfully record exactly what they see.

I have brought along a chart to illustrate that point. This clearly indicates the fact, that when people look at things, they try to the best of their ability to let their minds translate for them what they see and they are not always successful.

What we have here is presumably a series of spirals going round and round in this manner and getting closer and closer as they go toward the central point. As a matter of fact, those are not spirals at all. Those are perfect concentric circles. We will just prove that by taking for instance this one here at the extreme edge and will start in here and run our finger around and come back to the place where we started. Those are not spirals and yet the eye will invariably mistake them for such.

[1]Read at the Hospital Clinical Congress at Milwaukee, June 22, 1927. Mr. Paul is a colorist working in the research laboratories of the National Lead Co.

The mind endeavors to grasp and truthfully record things but it is absolutely impossible in some instances to do it. Just as in the case of those tests that it became necessary to throw out—we had to seek an organ over which the individual has no control. By means of apparatus that we had constructed in our laboratory it was possible for us actually to measure the heart beats and find out definitely by records just exactly what change there was when an individual would be exposed to different color sensations. In other words, we measured individuals at normal, then simply allowed them to remain seated and after certain intervals we would then have them come in and expose them to a bright light. There would be a noticeable jump of the recording needle. We would in consequence get an immediate record but it was with considerable disappointment that we were unable to get a definite record of the difference in response to a red as against a green and a green as against a blue. We know that there is a distinction and we know that there is a definite response.

In a short time we will be able to carry it further but for the present we have been able to determine definitely only that there is an actual response on the part of the individual, to be exact, a physical response, to a psychological color sensation.

Now the next step is to consider the use to which such information may be put. Research similar to that which we have been carrying on has also been conducted in Europe. We find Professor Fere and Professor Giardini have carried on tests which seem to show a man exposed to the influence of red will show a development of 50 per cent in excess of his physical power as compared with that of a quieting blue.

In New York there is a church where they have employed different colored lights and it is an object of considerable interest. They allow the lights to become very soft and then they allow them to become brighter and brighter. They go through the different hues of the spectrum and follow along as the services are being conducted, employing the lights in an endeavor to express the feeling which should be in the minds of the different individuals who are present at that time—the quieting blue, the tranquilizing green and the bright, stimulating red. It is being used with quite successful results but it is only in a pioneer stage.

We have tried to cover in a very simple way all of these different things which have been done, all of these very interesting experiments which have been conducted, reducing them to a logical basis, something that is really practical for use. We have endeavored to develop colors which are satisfactory for use in the hospital interior, particularly in certain special rooms. Obviously no one color can ever be perfectly used or could ever be satisfactorily employed throughout every hospital institution. We do find, however, that with certain studied modifications, colors for special rooms are distinctly appropriate. One of the most interesting, I think, is a color which has now been used in two hundred institutions both here in the United States, and in Sweden, and this bright scarlet is the color (indicating).

In special rooms on each floor they have set aside one small room in certain institutions for the use of melancholia patients as they call them. This has been used with extremely interesting results, the walls of the room being treated with this color, which is bright and startling. The individual is placed in that room for a matter of perhaps thirty minutes and at the end of that time is removed. Numbers of those patients that one encounters are in such a melancholic and despondent state they absolutely refuse to speak. After being placed in this room they are awakened immediately as no one could help being awakened when placed in a room treated with this color. They are allowed to remain in there for only a very short time.

There are modifications that have been used in certain other institutions where it was necessary occasionally to use the room for other purposes. They couldn't afford to devote a single room so they compromised by treating it in this lighter manner.

A second type of color treatment is illustrated in this sample of ivory. Here we endeavor to do one thing, combine the warmth and sunshine qualities of yellow in a very simple way with the white to produce a wall color that gives a high light-reflection factor. The light-reflection factor of this color is one of the highest that we are able to get on a wall like this, where only enough of the yellow is introduced in the composition to allow the white to be interesting in itself. This, for example, we used in dark corridors, and it furnishes a very excellent method of treatment. We go into the X-ray department, where the instrument is used for radiographic purposes, and this color has been found excellent as a side-wall treatment (indicating a light buff). For well-lighted corridors and halls that has also been used. The thought is, to establish this color as a single point and then we are able to depart from it, depending on the room. Should the room, let us say, be rather poorly illuminated with natural illumination, then we would increase the white in order to afford the necessary light reflection. In the same way, in the event the color proved too strong, we could decrease the light reflection by a sufficient quantity of black or gray to neutralize it. This is used in the radiographic room, for example, where it is necessary for the operator to employ the X-ray outfit for just a very limited space of time. It is not necessary at all that the side wall color be considered with relation to the instrument as in instances that will be cited further on.

As a suggestion for the treatment of solariums this (indicating a soft yellow-green) has been tried out with remarkably successful results and is being used extensively today.

Here we introduce the question of disturbed patients where we try to select a color that will be satisfactory for the particular room which they are to occupy. This scale of color, ranging from light green to deep gray-green, merely illustrates the thought of making this original color either lighter in the event that the room is dark, or of making it grayer in this way (indicating) if on examination the room is found to be so light that the original color will appear too highly saturated or too strong to be satisfactory for use. A slight alteration in the tinting material, actually gives a tremendous variety of tints from which to work, swinging the basic color from one point to another in any given direction.

Considering the wards, as the next step we again depart from the customary buff which was shown to you a few moments ago and this gray (indicating) will prove equally effective as a sidewall treatment. In the event that daylight is employed then it would be well to use a deeper tint. You will see a difference between these two grays. While this one is distinctly lighter (indicating) here we have one which is quite a bit darker, reflecting less light. This deeper gray (indicating) is for the hydrotherapy room or for the operating room or for the X-ray for deep therapy purposes and has been found excellent to employ. Now comes a question that is very interesting, one that we have, however, investigated to only a limited degree, namely, the question of what color to use in an operating room. It comes up again and again. We find that everyone has an individual theory regarding it

and there was at one time the thought that operating rooms should always be white. If not white, then the next thought was they should be green. At any rate, they should reflect a tremendous amount of white light. As a matter of fact, it is not the function of a sidewall in an operating room to reflect a quantity of light. It should, on the contrary, be an absorbing rather than reflecting medium.

We are given to understand that the particular point where the surgeon is operating is illuminated by light given off from a source in the immediate vicinity and it comes in direct rays to the objective. This object is sufficiently illuminated as not to require the additional illumination afforded by the reflection given off by the sidewall. The sidewall should tend to absorb rather than give off a quantity of white light, since on glancing up from the work there is danger of the surgeon's eyes encountering glare from the sidewall that would be detrimental to his work. The sidewall should furnish a background that is distinctly restful to the surgeon's eye, as in the case of a gray on this order (indicating) where the light reflection factor approximates 45 per cent.

There is one thing that is of interest. There is a lot of talk today on the subject of green for the operating room and it is often said that the green should exactly complement the red of blood.

Here we have worked out a spectral reflection curve to illustrate that point. This red curve is the red of blood (indicating) and was made by Dr. Sheard of the American Optical Society, and from this we obtained the red color of blood according to this curve. Then we worked out the complement of that curve and as a result got this curve here (pointing) which is the exact complement of this red curve. It was easy enough with this green curve simply to reproduce the complementary green color. Consequently, when anybody mentions complementary color of blood we inform him that in our estimation it would be highly impractical to use it in a room of the operating type.

For a color in the X-ray rooms where the immediate dimming of light will afford a high degree of light absorption we have developed a deep violet-red that has proved excellent for use. It is interesting to note that many people are under the impression that a gloss paint actually reflects more light than a flat paint. As a matter of fact, that is not, strictly speaking, true. Tests would seem to indicate that a gloss paint will reflect 45.5 per cent less light than a flat paint. The gloss paint also affords rather an unpleasant light as compared with the surface of a flat-texture paint. To illustrate that point, this chart has been prepared showing two paints. The same pigment composition is contained in each. The first has enough oil to make a glossy surface and the second has had added flatting oil to produce a flat surface. As a method of side wall treatment the latter for general purposes is by far the more satisfactory.

What we have endeavored to do is first to emphasize the necessity of doing away, if possible, with the high glaring gloss in the hospital. The second point is to try to the best of our ability to work out colors that would be satisfactory for use, that would enable standardization insofar as colors in the hospital are concerned and simplification insofar as paint and practical work is concerned. We have tried to bring the human element into the hospital, departing as far as possible from the glaring white about which Mr. Higgins spoke.

I am sure that I would be glad to answer any questions that you may have to ask upon the subject. In the meantime I want to take advantage of this opportunity to thank you very much indeed for the opportunity to speak to you at this time.

Cause of Death	Death Rates per 100,000 Persons Exposed					
	White			Colored		
	Jan.-June, 1927	Jan.-June, 1926	Jan.-June, 1925	Jan.-June, 1927	Jan.-June, 1926	Jan.-June, 1925
All Causes of Death	856.8	966.7	894.2	1540.4	1654.6	1612.9
Typhoid fever	4.2	2.5	2.3	6.5	4.5	6.3
Measles	7.1	18.0	4.4	3.6	13.0	3.2
Scarlet fever	4.4	5.0	5.4	1.4	1.5	1.2
Whooping cough	6.9	11.1	7.1	9.4	13.6	13.7
Diphtheria	11.8	10.1	12.7	6.7	6.2	5.3
Influenza	21.6	45.9	20.0	52.4	91.5	71.4
Meningococcus meningitis	1.3	.9	1.0	1.8	.6	.7
Tuberculosis—all forms	80.4	88.1	88.9	237.6	240.8	239.2
Tuberculosis of respiratory system	70.3	77.5	77.9	208.3	210.8	208.3
Tuberculosis of meninges; etc.	5.0	5.1	5.4	7.4	7.7	9.1
Other forms of tuberculosis	5.1	5.5	5.6	21.8	22.3	21.7
Cancer	74.5	74.3	70.7	71.8	67.0	72.8
Diabetes	17.3	18.2	16.9	19.4	16.3	15.9
Alcoholism	3.1	3.4	2.8	5.0	4.8	4.2
Cerebral hemorrhage; apoplexy	51.5	55.3	53.3	97.7	101.1	91.0
Organic diseases of the heart	130.0	142.3	128.1	217.4	219.5	232.1
Total respiratory diseases	102.7	140.6	118.0	209.8	276.3	239.0
Bronchitis	4.6	5.9	6.1	8.1	10.7	9.8
Bronchopneumonia	39.2	58.2	44.5	68.0	97.0	74.8
Pneumonia—lobar and undefined	50.9	68.2	58.9	121.9	155.6	139.3
Other diseases of respiratory system	8.0	8.3	8.4	11.7	13.0	15.0
Diarrhea and enteritis	16.5	18.0	19.8	19.6	20.1	27.1
Under 2 years	13.3	15.2	16.7	13.3	14.9	19.5
2 years and over	3.2	2.8	3.1	6.3	5.2	7.6
Acute nephritis	4.0	4.6	5.0	15.3	16.9	16.0
Chronic nephritis	66.0	72.2	67.6	129.6	137.0	131.9
Total puerperal state	14.5	15.8	17.0	25.5	24.5	25.5
Puerperal septicemia	5.9	6.0	6.5	13.4	11.4	11.6
Puerperal albuminuria and convulsions	2.8	3.5	3.8	4.6	5.9	5.6
Other diseases of puerperal state	5.9	6.3	6.8	7.5	7.2	8.3
Total external causes	68.2	66.5	70.8	115.5	110.4	109.9
Suicides	8.5	7.8	7.2	7.0	5.7	4.3
Homicides	3.1	3.1	3.5	36.6	33.1	33.0
Accidental and unspecified violence	56.6	55.6	60.1	71.9	71.6	72.6
Accidental drowning	4.5	4.1	4.6	6.5	3.4	5.2
Automobile accidents	15.1	14.5	13.6	14.7	13.1	11.3
All other and ill-defined causes of death	170.7	173.8	173.1	294.7	288.9	306.5

AN INTERESTING MORTALITY TABLE.

The above table was published in "the Statistical Bulletin" of the Metropolitan Life Ins. Co., July, 1927. It gives the death rate per 100,000 exposed, compared for color and for principal causes of death for the first six months of 1927, 1926, and 1925.

FROM THE EDITOR'S MAIL

Hospital for Incurable Poor

St. Anthony's Hospital,
September 13, 1927.

The newest and heartiest desire of the people of St. Anthony's Hospital would be that every large city of the United States would have a Hospital for **Incurable Poor** and **Infirm.**

Our applications for these cases are very numerous and we are unable to take the cases that appeal to us, many of which are from out of the city.

Having our neighbors' welfare at heart, and for the relief of these poor sufferers, we ask for the good of all the poor people of the United States, that this "Petition" be published, and that others who have their neighbor's welfare at heart may help this cause along.

This is a real lamentable state of affairs and we trust and know there are many good Samaritans in the United States that can and would help this cause.

Yours devotedly in this cause,

Sisters of the Poor of St. Francis,
St. Anthony's Hospital,
Columbus, Ohio.

Value of a Prescription

It was in a state where the colored people are looked on by their "white folks" pretty much as if they were children who were never expected to grow up. A Northerner tells of his Southern host, a doctor, being approached by a colored man, more or less dependent upon the physician's bounty.

The darky carried in his hand a prescription blank, which he fingered hesitantly before asking his benefactor, with just a shade of suggestion in his tone, where he was supposed to have it filled.

"Take it right over there to that drug store, uncle," the doctor said, "and remember I don't pay for having it filled."

"But," came the mournful remonstrance, "that 'scription don't do me no good 'tall if yoh don't pay for having it filled."—Medical Record.